S. HRG. 98-881

SKILLED ENLISTED RESERVE TRAINING ACT

HEARING

BEFORE THE

SUBCOMMITTEE ON MANPOWER AND PERSONNEL

OF THE

COMMITTEE ON ARMED SERVICES UNITED STATES SENATE

NINETY-EIGHTH CONGRESS

FIRST SESSION

ON

S. 801

To amend title 10, United States Code, to establish a program to provide high school graduates with technical training in skills needed by the Armed Forces in return for a commitment for enlisted service in the Armed Forces

CEDAR RAPIDS, IOWA

DECEMBER 15, 1983

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[1] Senator Daniel J. Evans, Washington, served on the Senate Committee on Armed Services from September 22, 1983, to February 9, 1984.

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SKILLED ENLISTED RESERVE TRAINING ACT

THURSDAY, DECEMBER 15, 1983

U.S. SENATE,
SUBCOMMITTEE ON MANPOWER AND PERSONNEL,
COMMITTEE ON ARMED SERVICES,
Cedar Rapids, IA.

The subcommittee met, pursuant to notice, at 8:45 a.m., in the Iowa Room, Iowa Hall, Kirkwood Community College, 6301 Kirkwood Boulevard, SW, Cedar Rapids, IA, Senator Roger W. Jepsen (chairman), presiding.

Present: Senator Roger W. Jepsen.

Staff present: Patrick A. Tucker, counsel; and Mary Kampo, staff assistant.

Also present: Jon Etherton, assistant to Senator Jepsen.

[The bill S. 801 follows:]

[S. 801, 98th Cong., 1st sess.]

A BILL To amend title 10, United States Code, to establish a program to provide high school graduates with technical training in skills needed by the Armed Forces in return for a commitment for enlisted service in the Armed Forces

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SHORT TITLE

SECTION 1. This Act may be cited as the "Skilled Enlisted Reserve Training Act".

FINDINGS

SEC. 2. The Congress makes the following findings.

(1) The national defense readiness of the United States is increasingly dependent upon the use of technically sophisticated weapons.

(2) The number of technically skilled enlisted members in each of the Armed Forces, both on active duty and in the Reserve components, should be substantially increased in the near future in order to enable the Armed Forces to operate and maintain adequately the increasingly technical and sophisticated weapons systems being introduced to modernize the Armed Forces.

(3) There are significant personnel shortages in many technical military occupational specialties. These shortages could be met at a reduced cost to the Government through a program in which civilian educational institutions provide technical training to qualified individuals and such individuals then enter the Armed Forces for service in pay grades commensurate with that training.

(4) The Armed Forces have traditionally used a variety of programs to provide specially qualified individuals entry into the Armed Forces at grades higher than the lowest officer or enlisted grade in order to meet a specific need. Such special entry programs have the potential for great cost savings to the Government and significant increases in return on training costs.

(5) In many skill categories in the Armed Forces, training takes over half the period of an initial four-year enlistment, meaning that less than half an initial enlistment may be spent in productive technical work for the Armed Forces. An effective special entry program would significantly increase productive work per initial enlistment period, and the potential to reduce the short- and long-term costs of military service, and would add needed trained members to the Ready Reserve.

(6) The community and technical colleges and institutes of the United States have the resources and capabilities to provide training in the technical specialities required by the Armed Forces.

(7) A special entry program under which community colleges and technical institutes would provide high school graduates technical training leading to an associate degree or technical certificate, simultaneously with the preparation of such high school graduates for military service in a pay grade commensurate with their training, would (A) contribute to the recruitment into the Armed Forces of young men and women with aptitudes and interests in high technology fields, and (B) reduce personnel shortages in specific military occupational specialties.

(8) The economic vitality of the United States would be strengthened through the establishment of such a program by increasing the number of persons having technical skills required to broaden the industrial base of the United States in critical skilled technical fields in which shortages have developed.

ESTABLISHMENT OF PROGRAM

SEC. 3. (a) Part III of subtitle A of title 10, United States Code, is amended—

(1) by redesignating chapter 108 as chapter 109; and

(2) by inserting after chapter 107 the following new chapter 108:

"CHAPTER 108—SKILLED ENLISTED RESERVE TRAINING PROGRAM

"Sec.
"2151. Definitions.
"2152. Establishment of program; service agreements.
"2153. Eligibility.
"2154. Status of member of program.
"2155. Penalties.
"2156. Approval of courses of instruction at educational institutions.
"2157. Assistance to educational institutions.
"2158. Annual report.

"§ 2151. Definitions

"In this chapter:

"(1) 'Program' means a skilled Enlisted Reserve training program established by the Secretary concerned under this chapter for an armed force nized by the Secretary of Education.

"(2) 'Member of the program' means a person entering into an agreement with the Secretary concerned under this chapter for participation in the skilled Enlisted Reserve training program of an armed force.

"(3) 'Educational institution' means a civilian college or university or a trade, technical, or vocational institute or other associate-degree-granting institution in the United States (including the District of Columbia, Puerto Rico, Guam, and the Virgin Islands) that provides education beyond the high school level and that is accredited by a nationally recognized accrediting agency or association or by an accrediting agency or association recognized by the Secretary of Education.

"§ 2152. Establishment of program; service agreements

"(a) For the purpose of obtaining adequate numbers of enlisted members with critical technical skills for service on active duty and in the Reserve components, the Secretary of each military department, under regulations prescribed by the Secretary of Defense, and the Secretary of Transportation, with respect to the Coast Guard when it is not operating as a service in the Navy, shall establish a skilled Enlisted Reserve training program. Under such program, the Secretary concerned may enter into agreements with qualified persons under which the Secretary agrees to provide educational assistance in a technical field to a person in return for that person's agreement to perform a specified period of Active and Reserve enlisted service in the armed forces.

"(b) An agreement under subsection (a) shall provide—

"(1) that the Secretary concerned shall provide educational assistance to the member of the program in accordance with subsection (c) for pursuit of a course of instruction in a technical field to be specified in the agreement;

"(2) that the member of the program, in consideration for that educational assistance, shall agree that, upon completion of the course of instruction, the member will either (as specified in the agreement)—

"(A) serve on active duty for a period to be specified in the agreement of not less than three years; or

"(B) serve in the Selected Reserve of the Ready Reserve under such terms and conditions as prescribed by the Secretary concerned for a period to be specified in the agreement of not less than six years (including any period of service on active duty, in active duty for training, and in any other active or inactive status); and

"(3) that upon completion of the technical course of training and completion of any additional military training requirements for service in a particular grade (other than requirements relating to length of service or time in grade) the member shall be placed in an enlisted pay grade (between pay grade E–3 and pay grade E–8) to be specified in the agreement.

"(c)(1) An agreement under subsection (a) shall provide for payment by the Secretary concerned of a stipulated per centum (up to 100 per centum) of the educational expenses incurred by the member of the program for instruction in the technical course of training stipulated in the agreement. Expenses for which payment may be made include tuition, fees, books, laboratory fees, and shop fees for consumable materials used as part of classroom or shop instruction. Payments for these expenses shall be limited to those educational expenses normally incurred by students at the institution providing the course of training.

"(2) An agreement under subsection (a) may also provide for payment of a stipend for each month the member is pursuing the course of training. The amount of the stipend shall be determined by the Secretary concerned, but may not exceed 50 per centum of the rate of basic pay in effect at the time of payment for members on active duty in the grade held by the member.

"(d) Assistance may be provided to a member of the program under the agreement until the member completes the course of instruction required for the award of an associate degree (or the equivalent evidence of completion of a technical course of training) by an accredited institution. However, a member of the program may not be provided assistance under this chapter for more than twenty-four months.

"(e) The authority of the Secretary concerned to enter into agreements under this chapter is subject to the availability of appropriations for that purpose.

"§ 2153. Eligibility

"To be eligible to participate in the program, a person must—

"(1) be selected under procedures prescribed by the Secretary concerned;

"(2) be a high school graduate (or the equivalent);

"(3) be accepted for enrollment, and enroll, in an approved course of instruction at an approved educational institution for training in a technical occupation that is designated by the Secretary concerned as a military occupational specialty in which significant enlisted personnel shortages exist; and

"(4) enlist in a Reserve component of an armed force under the jurisdiction of the Secretary concerned.

"§ 2154. Status of member of program

"(a) Upon signing an agreement under this chapter and becoming a member of the program, a person becomes a Reserve member of the armed forces. Before beginning the course of technical training provided for in the agreement the member shall complete basic training. If the member fails to successfully complete basic training, the agreement shall be terminated and the member shall be discharged from the armed forces.

"(b) Following completion of basic training, the member shall begin the course of technical training provided for in the agreement. Upon completing the technical training and completing any additional military requirement (other than length of service on active duty or time in grade) for the pay grade concerned, the member shall (if not already in that pay grade) be placed in the pay grade specified in the member's agreement under the program.

"§ 2155. Penalties

"(a) An agreement under this chapter is subject to section 2005 of this title in the same manner as that section is applicable to the provision of advanced education assistance (as that term is defined in subsection (e)(1) of that section).

"(b) The Secretary concerned, if the Secretary determines that the interest of the service so requires, may release any person from the program and discharge that person from the armed forces under the jurisdiction of the Secretary.

"§ 2156. Approval of courses of instruction at educational institutions

"The Secretary concerned may not make an agreement for the training of a member of the program in a course of technical training at an educational institution unless the course and the institution have been approved by the Secretary for the purposes of this chapter. The Secretary concerned shall prescribe regulations for the approval of courses of technical training and the approval of educational institutions. Such regulations shall require that in order for a course of training in a particular technical field to be approved the institution offering the course must have offered a program of instruction in that technical field or a similar technical field for a period of time to be specified in the regulations.

"§ 2157. Assistance to educational institutions

"The Secretary concerned may provide to educational institutions providing courses of training under the program—

"(1) financial assistance to cover the cost of the authorized purchase or lease of instructional equipment and training systems, course or curriculum development costs, and other related costs, including administrative costs associated with the program; and

"(2) other logistical support to assist in the operation of the program by the institution.

"§ 2158. Detail of military personnel

"The Secretary may detail members of an armed force under his jurisdiction (including retired members and members of the Fleet Reserve and Fleet Marine Corps Reserve recalled to active duty with their consent) for instructional and administrative duties at educational institutions where courses of training under the program are offered.

"§ 2159. Annual report

"(a) The President shall submit to Congress not later than December 1 of each year a report on the program. Each report shall include—

"(1) an evaluation of the program;

"(2) a determination of the feasibility of expanding the program; and

"(3) any recommendation for administrative or legislative action with respect to the program that the President considers appropriate.".

(b) The tables of chapters at the beginning of subtitle A, and at the beginning of part III of subtitle A, of title 10, United States Code, are amended by striking out the item relating to chapter 108 and inserting in lieu thereof the following:

"108. Skilled Enlisted Reserve Training Program 2151
"109. Granting of Advanced Degrees at Department of Defense Schools ..... 2161".

AUTHORIZATION OF APPROPRIATIONS

SEC. 4. Effective for fiscal years beginning after September 30, 1983, there are authorized to be appropriated such amounts as may be necessary to carry out chapter 108 of title 10, United States Code, as added by section 3.

OPENING STATEMENT BY SENATOR ROGER W. JEPSEN, CHAIRMAN

Senator JEPSEN. The Senate Armed Services Manpower and Personnel Subcommittee will come to order. In the jargon and the parlance of the Senate, I must say I appreciate everybody taking time out from their busy schedules to be here with us today in this very inclement weather and welcome both the panel members or people who will testify and our guests.

We are meeting today to receive testimony from public witnesses on Senate bill 801, the Skilled Enlisted Reserve Training Act, also known as SERTA. The legislation, introduced by my colleague Senator Thurmond of South Carolina, would provide authority for the Department of Defense to use civilian colleges and technical schools to train future enlisted servicemembers for critical technical occupations in which significant shortages exist.

It's widely known that a combination of factors has resulted in outstanding success in recruiting and retention rates in the Armed Services since the early 1980's.

The combination of targeted pay and benefit increases, a past recession, and a much more positive public attitude and public regard for military service has lead to the healthiest military personnel situation since the beginning of the All-Volunteer Force in 1973.

Despite this tremendous reversal of the trends of the late 1970's, personnel management problems still persist.

One major problem facing the Department of Defense is not an overall lack of personnel, but the failure of present recruitment systems to provide an adequate number of personnel qualified for selected technical operations.

This problem exists despite the maintenance of a network of military technical schools across the United States.

This is the problem that the Skilled Enlisted Reserve Training Act seeks to address.

The legislation would provide the Department of Defense with the authority to provide financial assistance to high school graduates who enroll in a civilian college or a technical school, while simultaneously enlisting in a Reserve component of the U.S. military.

In return for a commitment by the service member for future military duty, the Department of Defense would pay up to 2 years of full-time schooling.

The Department of Defense would promote the enrollee to enlisted pay grade between E–3 and E–8 upon completion of training, as long as all other requirements for the pay grade were met.

The proponents of this legislation have claimed that it will provide greater use of the private sector resources for meeting military requirements.

Studies have also shown that the substantial reductions in defense spending may result if this legislation is enacted and utilized on a widespread basis.

Advocates of the legislation have claimed that the implementation of the concepts in the Skilled Enlisted Reserve Training Act would result in the eventual increase of the technically skilled civilian work force as the beneficiaries of this program leave the service.

This legislation has received substantial support from service and veterans organizations, including the Reserve Officers Association, the National Guard Association of the United States and the Veterans of Foreign Wars.

Because of the potential benefits, I believe that the Skilled Enlisted Reserve Training Act deserves further study.

Today the subcommittee will hear from the following witnesses: Dr. Wayne Newton, trustee of Kirkwood Community College; Dr.

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John Hunter, professor of the College of Lake County of Graylake, Ill.; Dr. Walter Muller, education consultant from Houston, Tex.; and Dr. Lyle Darrow, vice chancellor of the Alabama State Department of Post Secondary Education; and Evan Hultman, past president of the Reserve Officers Association of the United States of America.

These gentlemen can all provide important perspectives on the issue of providing technical education to the members of the Armed Forces.

That's the purpose of today's hearing, to provide an opportunity to really learn about the possibilities offered by the concept of this bill, and to hear various perspectives.

All too often, hearings are held only to provide support for decisions that have already been made.

This hearing is different in that there have been no decisions made on Senate bill 801, except to recognize that it possibly has advantages over the present system of training.

Therefore, today's hearing truly is a chance for interested parties to educate us and influence the ultimate decision on Senate bill 801.

Also, I think it's very appropriate that this hearing be conducted here on the campus of Kirkwood Community College.

If S. 801 were enacted into law, schools such as Kirkwood Community College would become directly involved in the training of military personnel, and it is valuable, in considering this bill, to be able to visit institutions which would be affected by the bill.

So I thank Kirkwood Community College for making its facilities available to this committee for its hearing.

Finally, the record of this hearing will be held open for 2 weeks, so that anyone who wishes to, may submit a statement on the legislation for the record.

I will submit for the record the prepared statement of Congressman Charles E. Bennett.

[Prepared statement follows:]

PREPARED STATEMENT OF CONGRESSMAN CHARLES E. BENNETT

Mr. Chairman, thank you for the opportunity to testify on the need for the Skilled Enlisted Reserve Training Act as embodied in H.R. 1937 and S. 801. We are becoming more and more dependent on advanced technology, but the Armed Forces are having trouble finding enough able personnel to fill many technical positions. In an effort to address this problem, Senator Thurmond and I introduced legislation which would provide technical training to high school graduates who, in return for Government provided financial assistance, would agree to serve in the military at a pay scale commensurate with their training. This legislation has been endorsed by the National Guard, Air Force Association, Reserve Officers Association, Veterans of Foreign Wars, National Association for Uniformed Services, Department of Education of the State of Florida, and the Association of Community College Trustees.

The need for individuals with specific technical training has increased dramatically with the increasing sophistication of modern warfare. Unfortunately, the present recruitment system has failed to provide an adequate number of personnel capable of learning critical technical skills. Army planners have stated that the Army Reserve units alone need at least 250,000 technically skilled personnel. The Navy has reported that it has only been able to fill 53 percent of their needs for engineers, and by 1988 will need 70,000 more technical personnel, representing a 30 percent increase in the number of technical positions. We are all aware of the readiness problems facing all branches of the service because of a lack of skilled hands necessary to provide the sufficient maintenance and support. Reports indicate that there are Marine pilots who are flying only half

their training flights simply because the Corps does not have an adequate number of skilled technicians. We cannot afford to continue our present policies.

The Skilled Enlisted Reserve Training Act requires the Department of Defense to establish an alternate recruiting and training program which would provide technical training to high school students. Participants in the program would be required to make a commitment for future active or selective reserve duty. The Department of Defense would pay for up to two years of full-time schooling, and upon completion of training the Department of Defense could promote the enrollee to a military pay grade between E–3 and E–8. The advantages of such a program are numerous.

The program differs from the current training system in that it would allow participants the choice of meeting their military commitment and pursuing their technician training in their home community. Currently, reservists are often forced to leave their homes and travel great distances for training at Department of Defense centers. This program offers the enrollee the opportunity to serve our country without leaving home for more than basic training and the annual two week reserve duty.

Another attractive feature of this program is that it offers the participant promotion to a non-commissioned officer grade between E–3 and E–8 upon completion of training. Thus, the enrollee will not only gain career training in a demand skill without having to leave his hometown, but will also gain advancement in both rank and pay. I believe that these two features will help attract large numbers of personnel to the program and lead to a higher retention rate than the present system.

This legislation would not require the creation of any additional Government schools but would make effective use of a proven, high quality training system: the nation's community, technical, and junior colleges. By shifting the technician training from Department of Defense schools to local schools costs could be reduced. Overhead costs for Department of Defense schools and the number of classroom instructors could be reduced. This would allow a large number of DOD instructors to return back to the areas where they are critically needed. A defense consultant has stated that this legislation would save a minimum of $12 billion dollars over five years.

In addition, this program would give the military a much better return on their investment. In many skill categories in the services training takes over half of the initial four year enlistment, meaning that less than half an initial enlistment may be spent in productive technical work. This legislation would significantly increase productive work per initial enlistment period. As a defense consultant's research demonstrates, the services investment in an E–5 technical specialist could be paid back within 20 weeks of entry into the service as opposed to 50 weeks for the current system.

The benefits gained by this legislation are not limited to the military. This program would produce a large group of skilled technicians who will eventually become available to the private sector which would greatly increase our Nation's base of skilled technicians. This would be of great benefit to our Nation's economy as it seeks to improve its international competitiveness.

This legislation also gives each service the flexibility to tailor the program to its own needs. It allows for the Secretary of each branch of the military services to designate the occupations to be covered by this program. In addition, each Secretary is able to define all the requirements for training of the enrollees.

Some changes in the current Department of Defense training system would have to be made. However, I believe it is clear that we are facing an acute shortage of military technicians, and the present system has proven incapable of addressing the problem. With a recovering economy, the present problems will only be exacerbated. The continuation of our strong defense posture is dependent upon the development of a highly trained technical force. Our national security has rested upon our technical superiority over our adversaries, and we can no longer afford to fail to address this problem. I believe that the Skilled Enlisted Reserve Training Act represents a positive step in alleviating a potential Achilles heel in our national defense.

Senator JEPSEN. Gentlemen, welcome to Cedar Rapids. We want to make sure, Mr. Darrow, that you felt that you could go back with some memories of what the Midwest weather was really like to share with your folks down there as they walk around in their rather milder climate with milder temperatures, and no snow.

I would say at the onset that your written statements that you have will all be entered into the record as if read.

Therefore, I have asked that you limit your oral statements to approximately 5 minutes so that we will have more time for questions.

I would, for sake of identification, introduce to my immediate left Jon Etherton, who is on my Senate staff, legislative assistant in charge of military matters.

To my immediate right is Mr. Tucker, who is the staff member in charge of military matters dealing with manpower personnel from the Senate Armed Services Committee staff.

Mary Kampo on his immediate right is on the Armed Services Committee staff as an administrative aide in the area of manpower and personnel and all other duties that may be assigned.

And the very attractive lady on the far right is the court reporter, who was born in Cresco, lives in Des Moines, and came to Cedar Rapids for this hearing. With that, we will now proceed in any manner which you so desire. We will start with Mr. Wayne Newton, our host trustee of Kirkwood Community College. Welcome, and you may proceed.

STATEMENT OF WAYNE NEWTON, TRUSTEE, KIRKWOOD COMMUNITY COLLEGE

Mr. NEWTON. Thank you, Senator Jepsen. In listening to your opening statement, I can say that we very much agree with the premise with which you have outlined S. 801, and we are honored that you have elected to conduct the first hearing of your Subcommittee on the Skilled Enlisted Reserve Training Act, S. 801, on a community college campus; and we are very pleased to welcome you, both to our community and to Kirkwood Community College.

It is my pleasure to greet you both as a host and as a spokesman for the Nation's community colleges. SERTA is supported by the boards of both the Association of Community College Trustees, in which I serve as first vice president, and the American Association of Community and Junior Colleges, as well as by the ACCJC–ACCT Joint Commission on Federal Relations, on which I also serve.

Our joint commission assisted both Senator Thurmond and Representative Bennett in the preparation of their identical bills, S. 801 and H.R. 1937, because we firmly believe that both the military services and the Federal budget could be helped by this program.

We appreciate your determination, Mr. Chairman, to move ahead with these hearings in the first year of this Congress. It heightens the possibility that the bill may reach a vote in the Armed Services Committees and on the floors of the Senate and House in this Congress.

We hope you will convene additional hearings, perhaps in Senator Thurmond's home State of South Carolina, as well as in Washington, DC, because today's panel does not begin to exhaust the field of expert witnesses who ought to be heard on the merits of this program.

A number of veterans and military personnel organizations have expressed support for the bill—among them, the Board of the Air Force Association, the Veterans of Foreign Wars, the Aerospace Educational Foundation—apparently for the same reasons that the community colleges and our joint commission are supporting it.

They believe that this bill can provide a better pool of skilled technicians from which the Nation must draw for an effectively staffed military capability.

For example, the Veterans of Foreign Wars gave its support to the bill 18 months ago, when the earlier version of SERTA was introduced in the last Congress. In a letter to the bill's sponsors, Arthur J. Fellwock, National Commander-in-Chief of the VFW, wrote:

I have studied your proposal closely and I find that it has manifest merit. You displayed an uncommon amount of common sense. H.R. 5583 fully meets the often competing requirements of cost control and clear military need. I am pleased to extend the support of the Veterans of Foreign Wars of the United States for this measure . . . Senator Thurmond may feel free to circularize this letter as an earnest show of VFW approval and support.

In hearings last January on the Emergency Mathematics and Science Education Act, Congressman Ike Skelton, a member of the House Committee on Armed Services and its Subcommittee on Personnel and Compensation, told the House Subcommittee on Elementary, Secondary and Vocational Education:

Early last year, I released a study which I had requested from the Library of Congress on the status of science and engineering education in the United States. I would like to submit a copy of this complete report for the record.

Shockingly, the report reveals major problems ahead in meeting this country's needs for scientists and engineers in several critical areas. A shortage of trained technical personnel would have serious implications for our defense posture, which relies on sophisticated ships, planes and tanks.

It also would have a negative impact on our economy which depends on the skills of scientists and engineers for advances in agriculture and industry. If shortages of scientists and engineers are not recognized now, and acted on, we are going to find ourselves in a "Technology Gap" that will be far more serious than the "Sputnik Gap" of the 1950's.

This situation has particularly serious implications for defense. U.S. ships, planes and tanks have become increasingly more complex and reliant on high technology. Both the armed services and the Department of Defense, however, are experiencing problems in recruiting and retaining technically trained personnel.

Almost 10 percent ($22.7 billion) of the fiscal year 1983 Department of Defense budget is for research, development, testing and evaluation. The DOD employs 61 percent (53,712) of all engineers employed by the Federal Government.

None-the-less, the Air Force reported that 57 percent of its present civilian vacancies are for engineers, and in 1980 the Navy reported that it needed to hire 1,950 engineers and at the entry level but was able to fill only 53 percent of its needs.

Our defense policy has long depended on technological superiority to that of the Soviet military. But our edge may be evaporating. We may soon find that our quality is no longer so superior that it compensates for the Soviet superiority in numbers.

Such engineering shortages in DOD and in the various branches of the armed services can be reduced by using 2-year engineering technology graduates from community colleges. The economic and practical feasibility of using a two-tiered structure in the engineering area has been fully demonstrated by industry where ratios of 3 to 5 technicians are used for each engineer.

In the October 1983 issue of Proceedings, Commander Brett Warwood of the U.S. Navy wrote a convincing article on why the Navy should rely on community colleges to do basic technical training.

A comparison made by the author found that "many Navy technical training programs have comparable programs administered in the local colleges which could be used to the benefit of the Navy and the colleges."

He pointed out that "the demand for technical ratings is likely to swell by 30 percent by 1989," and "the Navy will be facing major problems of simply meeting its manpower goals."

Warwood adds:

By shifting technical training to local schools, the number of personnel sent to remote schools would be reduced, thereby rolling back the cost of travel, room and board. Fewer manhours would be lost because local part-time courses can be more easily integrated into work schedules than can training at naval schools.

Overhead costs could be reduced as funds channeled into heating, lighting, clerical support and instructional material could all be trimmed.

By using civilian technical expense to train the Navy's lower ratings, the number of shore-based naval instructors could be cut back, allowing more technical ratings to remain at sea where they are critically needed. This could partially alleviate shortages of shipboard technicians.

There are additional advantages for which cost estimates cannot be made. Young technicians who are not sent to remote schools away from their families might display higher morale.

Exposure to the local populace could lead to improved community relations, as the sailor-citizens became more aware of the needs of their individual communities.

At the same time, the community's increased awareness of the military could aid the local recruiting effort.

Some modification of current naval curriculum would, of course, be necessary. Basic knowledge courses could be entirely shifted to civilian schools as could many courses geared toward specific equipment—particularly if the naval instructional materials were also transferred to the local schools.

Courses involving classified material would remain within the purview of military instructor. The savings accrued from the elimination of courses, curtailment of travel and per diem funds, increased man-hours and reduced overhead should offset the spending necessary to shift technical training into the local schools.

In the monograph "Toward a Consensus on Military Service" [June 1982], the Atlantic Council of the United States and its influential Working Group on Military Service asserted:

The quality of Army recruits in recent years, as measured by test scores and the possession of high school diploma . . . has often fallen below that of the draft years, and even the early years of the volunteer force. . . . Higher quality becomes ever more essential with the growing sophistication of weaponry . . .

It is clear that the Army's reinforcement capability is much less than that needed to provide confidence in a successful conventional defense.

Both the Department of Defense and the makers of our Nation's armaments could be helped by the expanded stream of skilled technicians that this program would make available. The defense industry has shared this observation with the community colleges.

Our Commission is convinced from a searching study and from the expert counsel of such DOD consultants as Dr. Walter Muller, whose illuminating testimony is also part of this hearing, that DOD has absolutely nothing to risk and potentially much to gain by trying this program.

We can't help but be somewhat mystified by some of the reservations that have been expressed both formally and informally by the military over this bill.

For one thing, those who see the bill as "an attempt by the community colleges to take over the Nation's military training" are raising a misconception that suggests that they do not understand the bill.

Has the highly productive and longstanding system of Reserve Officer Training Corps [ROTC] culminated in the universities gobbling up all the military training? Hardly.

As you know, Iowa is not the center of military presence in the United States. And yet here I sit, an Iowan, an Iowa community college board member, in complete agreement with the thrust of this proposal—not because of what it will do for Kirkwood, or the Iowa system, or even the national community college network, but because of what this proposal will do for America and our Armed Forces.

While the format of this program is very different from ROTC, the parallel is apt. The options to both the services and the recruits for mixing training and learning would be much more varied under SERTA than under ROTC.

It is the community colleges' expectation, as we read SERTA, that the program is designed to operate entirely at the pleasure of the individual services. The act gives the secretary of each service the new authority to tailor courses to meet specific and changing needs. Adaptability and flexibility are unique qualities of the community and technical colleges that enable them to serve such needs.

If the Army needs 250,000 better technicians to effectively operate and maintain the weapon systems currently deployed among its Reserve units—as we have been told by Army insiders—then the Army could go about matching those specific skill requirements with the community colleges that either have courses or can add courses that meet those needs.

Likewise, if the Navy needs 20,000 medical technicians to bring its health services to full strength as we have been informed, then the Navy could program that training with the community colleges best equipped to fill those needs.

Neither the Army nor the Navy nor the Air Force would be bound by what the other was doing. Of course, where a college or a course met the particular technician needs of more than one service or base, surely the training could be programmed at a level to serve both. Otherwise, each service could use SERTA individually, approving on only those programs that served its specific needs.

Here at Kirkwood, we currently do this type of tailoring or customizing of basic industrial or business training programs to meet the "job specific" needs of each business with which we contract. This type of flexibility is presently what is envisioned by S. 801.

Marine Corps observers have pointed out to us that there are Marine Reserve pilots who are flying only half their appointed flight training schedules right now, simply because the corps does not have the skilled hands to provide the necessary maintenance and support. Considering the international tensions our President is wrestling with today, such a state of readiness is inexcusable.

Frankly, Mr. Chairman, our members do not look upon this proposal as any special favor to the community and technical colleges. We have supported the bill simply because we saw it as a way in which the community and technical colleges could more fully serve the national interest. And we support it solely for that reason.

We believe our colleges have on stream—or could readily establish as specific shortages might require—a host of courses and curricula that could help meet the military's specific skill needs, and we can fill them with more talent than the services are now attracting, and at a lower cost.

Mr. Chairman, America is presently served by over 1,100 technical and community colleges, with hundreds of additional branch campuses and learning centers.

In Iowa alone, there are 15 community colleges just within the State system and several colleges have additional outreach centers. At Kirkwood alone, we have training facilities not only here in Cedar Rapids, but in at least one location in each of the other six counties we serve.

From our structure comes the capability to develop customized training programs in nearly any field needed by the military—and to offer those courses at any one of a number of several locations.

The obvious result is to be able to serve nearly any training need on a commuting basis. This same ability generally exists all across Iowa.

And, as much as we, in Iowa, would like you to believe otherwise, we are not unique in this ability. All across this country you will find community colleges accessible—flexible—and capable—of delivering quality—customized—personally tailored training programs.

Moreover, traditionally, we have done all this at a cost far less than any other system available.

Quality education at less cost is our hallmark—Our reason for existing and the reason we so strongly believe we can benefit the Department of Defense.

It seems to us, Mr. Chairman, that the business of assuring our country of sound military capability both in the Active and Reserve Forces in this age of accelerating technology is not just a game of numbers, but is also a proposition of skilled manpower and skill sources.

Given the opportunity, we believe that the community colleges can fill the gap between what the military has and what it needs.

We may not need to point out that the community, technical and junior colleges now form the largest segment of American higher education.

More than 5 million students are taking credit courses and degree programs this fall in the 2-year colleges. And a number again that large are using their noncredit courses, very often to advance their career skills.

When it comes to formal technician training, this network of colleges is the largest source outside industry's own inhouse programs.

In SERTA, Mr. Chairman, you have a program that could dramatically expand the military's recruitment market with this source. In a word, we believe that SERTA would "mainstream" the military's technician training effort.

Summing up, Mr. Chairman, we believe that both the national interest and the military would gain significantly from SERTA on three counts, because it could:

One, eliminate many of the technician shortages plaguing both the regular services and their reserve units.

Two, raise the overall quality and competence of enlisted personnel before they enter the ranks of the military.

Three, achieve relative cost savings in the process.

We are proud to be a part of this panel, and I am sure I speak for the panel as a whole when I say we will do all that we can to provide answers for any questions you may have.

Thank you again for this opportunity and for visiting us at Kirkwood today.

Senator JEPSEN. The order proceeds you here, we will continue on down with the panel. Many of these questions that we may have certainly would be addressed by more than one panel member.

To facilitate things, we will continue with Dr. Hunter, the president of the College of Lake County.

Welcome, and again I remind you your statement as written will be entered into the record as if read. You may proceed any way you wish.

STATEMENT OF DR. JOHN O. HUNTER, PRESIDENT, COLLEGE OF LAKE COUNTY

Mr. HUNTER. Thank you, Mr. Chairman. I'm pleased to join the testimony in support of Senate bill 801. My purpose is to illustrate how and why its fundamental concepts do work in practice. I shall attempt to do so through specific references to a contractual relationship between the U.S. Navy and the College of Lake County, which established the CLC Naval Training School at Great Lakes Naval Base in Illinois.

Following a period of negotiations in 1979, the College of Lake County entered into this contractual agreement in February 1980 for 3 years to provide instructional programs for advanced recruits. In October 1983 this agreement was renegotiated and extended for 5 option years. There are over 500 full-time staff members involved in the school. All courses are taught on base, but the college provides support services through its main campus.

Currently the school is providing instruction in the following programs: propulsion engineering, basic electricity and electronics, fire control technician, advanced electronic technician, electrician's mate training, interior communications, closed circuit communications, diesel mechanics, instructor's training, and gunner's mate training.

Additionally, there are remedial programs provided for recruits lacking requisite skills, which, as you know, is a major problem for the armed services as well as business and industry.

In fiscal year 1983, 30,106 naval students graduated from CLC/NTS programs. The same number might have been trained, although it is highly unlikely, through the previous training structure which used Navy personnel, but not without substantially greater cost to the Navy, both financial and, very importantly, deployment of experienced personnel from fleet assignment to shore duty for instruction. It was this latter consideration which motivated the Department of the Navy to contract these programs in 1979.

Allow me to give a concrete example of how civilian instruction can be used effectively to permit the greater flexibility the Navy is seeking in staff deployment.

Recently, during the Beirut crisis, 30 petty officer corpsmen were transferred from Great Lakes to Lebanon. Among these men and women, several had been assigned to teach emergency medical practices. Thus, as the Navy responded to this crisis, continued preparedness of new medical corpsmen was undermined. However, because of the existence of the CLC Naval Training School, there was a resource for dealing with the problem.

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Lt. Cdr. Charles Mount, the Training Officer of the Great Lakes Hospital Command, took the initiative to develop a training program with the college that guarantees a smooth flow of trained corpsmen despite national emergencies. This is not just a cost-effective replacement program, however. The skills of these corpsmen will be upgraded to the paramedic level, a process that could not have occurred without the college involvement.

There are many dedicated professionals in the U.S. Navy like Lieutenant Commander Mount who can be assisted in their training systems if the proper linkage is developed.

Through the CLC Naval Training School, we have come to know and admire these men and women, and we have learned how to work with them in an appropriate division of labor. Many other community colleges could do the same. The programs that I have mentioned are the types of programs you will find in the spectrum of vocational/technical courses offered by community colleges.

There are experienced professionals in the training field who wonder why partnerships have not been stimulated by public policy before now. The current dean of the CLC Naval Training School, William Class, a retired Navy captain who is very knowledgeable of military and defense technology training needs, asks the primary question: "Why do community colleges, the military, and defense industries continue to duplicate each other in training programs? It is silly and wasteful and retards our ability to adapt to the new technologies."

This comment by Dean Class reflects an awareness of the technological revolution: New technologies such as CADD/CAM, lasers and fiber optics are having the impact of the steam engine and harnessed electricity in previous centuries.

The adaptation he speaks of concerns both the military and industrial work forces. Its necessity has profound implications for education and training in the rest of this century.

The Navy knows, for example, that its future sailors shall not be needed for such duties as painting, loading or ordnance, and other menial tasks associated with past ship duties.

As a highly technical service, it is increasingly dependent on education and training to operate and maintain the high tech equipment now coming into the naval/military hardware inventory.

Adm. James D. Watkins, Chief of Naval Operations, recently expressed the Navy's grave concern about the quality of our schools, stating that, "A high school diploma, by itself, no longer proves an ability to survive in today's complex and technically oriented society."

The preparation required for the new Navy's enlisted force may well mean post-secondary education.

The linkage needed with the armed services is not just one on one. It is also possible and desirable for educational institutions to link together in furtherance of the S. 801 goals.

One such enterprise that might be instructive is the consortium developed by the College of Lake County, Governor's State University, and Southern Illinois University.

Under the leadership of Capt. Vincent McDonough, Commander of the Service School Command at Great Lakes, these institutions were able to join together in providing off-duty education by hiring a common staff to serve all three.

Dr. Marcia Anderson, director of Occupational Studies at Southern Illinois University, stated recently, "Had the consortium not developed, the costs of the program" [at Great Lakes] "would have been prohibitive."

The consortium, administered by the CLC Navy Campus Achievement Office, offers credit courses leading to the associate degree. bachelor's degree, and master's degree for men and women at Great Lakes. To date 1,296 students have been served.

These efforts, by the way, are not restricted to full-time military personnel but include reservists as well. The College of Lake County is now discussing with the Regional Reserve Training Center at Great Lakes how to assist in the training of reservists in a manner very similar to the provisions of S. 801.

I understand that there is some concern within the armed services about S. 801. In microcosm, perhaps, there was similar and natural concern and feeling of trepidation, on both sides, about the introduction of the CLC Naval Training School at Great Lakes.

These fears were quickly dissipated. Why? Because both sides discovered a bonding principle. It is that, in the end, professional competence and integrity are the keys to an effective relationship.

Mutual respect between the Service School Command and CLC/NTS was not difficult to establish. We have learned much from each other.

In my view, this professional tendency to form partnership when the goals are clear is the most significant discovery of the contractual relationship.

Our joint venture with the Navy would hardly have been possible even 10 years ago, and certainly not during the Vietnam war. But we are in a new era.

You may agree, Mr. Chairman, that this Nation has education and training problems of a very serious nature which can no longer be approached through isolated effort.

In relation to defense preparedness and in relation to many of the manpower needs in American industry, there are ways in which the armed services and higher education can cooperate to meet the challenge of technological change.

Obviously, there are differences of institutional perspective, and there will always be the need to protect institutional integrity. Serious education problems are not easily resolved.

What we are focusing upon in the creation of the Skilled Enlisted Reserve Training Act is an aspect of public education policy which would permit the armed services and this Nation's community colleges to join in the exploration of educational delivery for meeting new manpower requirements.

Mr. Chairman, I do have one specific concern about the language of the bill. The section on "Detail of Military Personnel," to educational institutions, needs to be clarified or amended out. As written, it is an unwise and counteractive provision. But, on the whole, S. 801 is eminently sound, good sense legislation, good for the armed services, good for the community colleges, and, most of all, good for the Nation as a whole. Thank you, Mr. Chairman.

[The prepared statement of John O. Hunter follows:]

PREPARED STATEMENT BY JOHN O. HUNTER, PRESIDENT, COLLEGE OF LAKE COUNTY, GRAYSLAKE, IL

I

Mr. Chairman, I am pleased to join the testimony in support of the Skilled Enlisted Reserve Training Act. My purpose is to illustrate how and why its fundamental concepts do work in practice. I shall attempt to do so through specific references to a contractual relationship between the U.S. Navy and the College of Lake County which established the CLC Naval Training School at the Great Lakes Naval Base in Illinois.

Following a period of negotiations in 1979, the College of Lake County entered into this contractual agreement in February, 1980, for three years, to provide instructional programs for advanced recruits. In October, 1983, this agreement was renegotiated and extended for five option years. There are over 500 full-time staff members involved in the school. All courses are taught on base, but the college provides support services through its main campus.

Currently, the CLC Naval Training School is providing instruction in the following programs: Propulsion Engineering, Basic Electricity and Electronics, Fire Control Technician, Advanced Electronic Technician, Electrician's Mate Training, Interior Communications, Diesel Mechanics, Instructor Training, and Gunner's Mate Training. Additionally, there are remedial programs provided for recruits lacking requisite skills, which, as you know, is a major problem for the armed services as well as business and industry. These courses are titled Academic Remedial Training and Job Oriented Basic Skills (JOBS) Engineering Strand Course. Both ART and JOBS are carefully tied into the technical programs.

Primarily as a result of our positive experience with the Service School Command at Great Lakes Naval Base, the College also decided to bid on another Naval contract to provide basic skills courses for the Pacific Fleet in San Diego and Hawaii. This three year contract began in October of this year. Since 1980, the College has also developed contractual programs and services at Fort Sheridan, Illinois for U.S. Army personnel stationed there. Except to point out the significance of expanding relationships in an area of critical need—basic skills—I shall not refer to these later programs but shall attempt to focus on our experience of the past four years at Great Lakes, highlighting those elements of the experience which I think are relevant to S. 801.

II

In fiscal year 1983, 30,106 Naval students graduated from CLC/NTS programs. The same number might have been trained, although it is unlikely, through the previous training structure which used Navy personnel, but not without substantially greater costs to the Navy—both financial and, very importantly, deployment of experienced personnel from fleet assignment to short duty for instruction. It was this latter consideration which motivated the Department of the Navy to contract these programs in 1979.

Allow me to give a concrete example of how civilian instruction can be used effectively to permit the greater flexibility the Navy is seeking in staff deployment. Recently, during the Beirut crisis, thirty Petty Officer corpsmen were transferred from Great Lakes to Lebanon. Among these men and women, several had been assigned to teach emergency medical practices. Thus, as the Navy responded to the crisis, continued preparedness of new medical corpsmen was underminded. However, because of the existence of the CLC Naval Training School, there was a resource for dealing with the problem. Lt. Commander Charles Mount, Training Officer of the Great Lakes Hospital Command, took the initiative to develop a training program with the College that guarantees a smooth flow of trained corpsmen despite national emergencies. This is not just a cost-effective replacement program, however. The skills of these corpsmen will be upgraded to the paramedic level, a process that could not have occurred without the College involvement.

There are many dedicated professionals in the U.S. Navy like Lt. Commander Mount who can be assisted in their training systems if the proper linkage is developed. Through the CLC Naval Training School, we have come to know and admire these men and women, and we have learned how to work with them in an appropriate division of labor. Many other community colleges could do the same.

The programs that I have mentioned are the types of programs you will find in the spectrum of vocational/technical courses offered by community colleges. I do not mean to imply, of course, that community colleges have available ready-made programs like Fire Control Technician geared to Navy fleet requirements. Such a curriculum results only from articulation with the Navy. The contract must precisely define the competencies and job requirements which set the instructional objectives. Such curriculum development is not alien to community colleges, and they could be engaged in permutations of this process as called for in S. 801. The main point I wish to make, however, is that the basic subjects which are essential to success in specialized training—such as electrical technology, medical technology, computer science, mathematics and other vitally important subjects of general education—are taught regularly in community colleges.

There are experienced professionals in the training field who wonder why partnerships have not been stimulated by public policy before now. The current Dean of the CLC Naval Training School, William Class, a retired Navy captain who is very knowledgeable of military and defense technology training needs, asks the primary question: "Why do the community colleges, the military, and defense industries continue to duplicate each other in training programs? It is silly and wasteful and retards our ability to adapt to the new technologies."

III

This comment by Dean Class reflects an awareness of the technological revolution: new technologies such as CADD/CAM, lasers and fiber optics are having the impact of the steam engine and harnessed electricity in previous centuries. The adaptation he speaks of concerns both the military and industrial work forces. Its necessity has profound implications for education and training in the rest of this century. The Navy knows for example that its future sailors shall not be needed for such duties as painting loading of ordnance and other menial tasks associated with past ship duty. As a highly technical service it is increasingly dependent upon education and training to operate and maintain the high tech equipment now coming into the Naval/military hardware inventory. Admiral James D. Watkins, Chief of Naval Operations, recently expressed the Navy's grave concern about the quality of our schools, stating that "a high school diploma, by itself, no longer proves an ability to survive in today's complex and technically oriented society." [1] The preparation required for the new Navy's enlisted force may well mean post-secondary education.

If it is necessary to invest in more military hardware, I submit that it is even more necessary to invest in the development of our human resources. S. 801 is a wise investment in human resource development. You may agree that a new understanding about education and training as a national priority cuts across other policy considerations. Whatever the state of our defense preparedness should be, it is not simply a matter of blind exploitation of new hardware. It is essential to have people in charge of this technology who know what they are doing and have a sense of responsibility about their jobs.

There is, in other words, a qualitative dimension in defense occupational training which cannot be measured in dollars. The CLC Naval Training School has delivered this quality. Again, many other community colleges could do the same.

IV

Quality in education and training is not always obtained by competitive bid. Quite frankly, the College of Lake County would not persist in its efforts with the Navy if it were constantly faced with underbidding every other potential contractor. Nevertheless, we also stress cost-efficiency and are working to achieve greater cooperation with the Navy on anticipated needs and change requests as part of a cost containment plan.

The cost efficiency of CLC/NTS is documented in a number of ways. Careful attention is given to persistence/attrition and to "flow-through" rates. For example, in the Basic Electricity and Electronics program—one of the largest at Great Lakes—in the year prior to the inception of CLC/NTS, the overall attrition (i.e., students being dismissed or failing) was 22 percent. Since then, attrition has dropped to an average 12 percent. Recruits arriving at the base for training in one of our programs are immediately assigned to class whereas, prior

[1] See L. Edgar Prina, "Sea Power," September 1983, pp. 24–25.

to the contract, they may have waited for weeks to be assigned due to the shortage of instructors. We constantly monitor these factors which are, of course, important to cost control.

Another indicator of cost efficiency is the unit cost of training under CLC/NTS as compared to previous Navy costs. The funding level to operate the School is approximately $17 million per year, almost all of which is devoted to personnel costs. In 1983, the average FTE faculty cost, including benefits, was $32,000. In 1980, the year we assumed responsibility, the Navy's average cost for an E–7 Petty Officer was reported to be $36,000, excluding costs of instructor training.

What it would cost the Navy now to reinstitute the Service School Command with all-Navy personnel we do not know. We have some perspective on the trauma costs of such regression. It seems virtually prohibitive if the Navy intends to continue its thrust to achieve greater flexibility in fleet assignments. An organizational development of considerable magnitude has occurred. There are still problems to be resolved, but the wisest course is to continue this development through the same cooperation evidenced so far. The College understands the Navy's need to contain costs and shares the conviction that quality and cost efficiency are parallel concerns. This is the nature of community college development everywhere.

V

The relationship between the Navy and the College to this point has been excellent. There now exists a model for similar efforts in meeting defense training needs such as those envisioned in S. 801.

The next step in this contractual relationship is to extend the model for credentialing purposes. The College has been exploring this possibility with the Illinois Community College Board and the Illinois Board of Higher Education. The creation of a Defense Occupational Institute may be the outcome. In the near future, the College shall also begin discussing this concept with Congressman John Porter. Congressman Porter's district includes the Great Lakes Naval Base. Our Board of Trustees expects to have this topic on its agenda in January.

As more linkages are made between the military and educational institutions through contractual training and off-duty, on-base education, the more potential there is for recognition of military training as equivalent to college level work. Indeed, many industries have no difficulty seeing that equivalency and rely heavily on trained ex-servicemen. By the way, our major competition in recruiting qualified technical instructors for CLC/NTS was large corporations.

The linkage needed is not just one on one. It is also possible and desirable for educational institutions to link together in furtherance of the S. 801 goals.

One such enterprise that might be instructive is the consortium developed by the College of Lake County, Governor's State University, and Southern Illinois University. Under the leadership of Captain Vincent McDonough, Commander of the Service School Command at Great Lakes, these institutions were able to join together in providing off-duty education by hiring a common staff to serve all three. Dr. Marcia Anderson, Director of Occupational Studies at Southern Illinois University, stated recently: "Had the consortium not developed, the costs of the program would have been prohibitive." The consortium, administered by the CLC Navy Campus Achievement Office, offers credit courses leading to the Associate Degree, Bachelor's Degree, and Master's Degree for men and women at Great Lakes. To date, 1,296 students have been served.

These efforts, by the way, are not restricted to full-time military personnel but include reservists as well. The College of Lake County is now negotiating with the Regional Reserve Training Center at Great Lakes to assist in the training of reservists in a manner very similar to the provisions of S. 801.

VI

I understand that there is some concern within the armed services about S. 801. In microcosm, perhaps, there was similar natural concern, on both sides, about the introduction of the CLC Naval Training School at Great Lakes. I remember as president, for example, feeling the pressure of carrying 120 newly appointed faculty members on the college payroll, waiting for the Navy to deliver on its promise of funding. You can imagine the cash flow anxiety. Other CLC staff members wondered about how we could get military cooperation on quality issues and concerns that seemed to us unique to higher education. We were also aware of the feelings of trepidation among some members of the Great Lakes Naval staff

about the college's ability to deliver according to Navy requirements. These fears were quickly dissipated. Why?

Because both sides discovered a bonding principle. It is that, in the end, professional competence and integrity are the keys to an effective interinstitutional relationship. Mutual respect between the Service School Command and CLC/NTS was not difficult to establish. We have learned much from each other. In my view, this professional tendency to form partnership when the goals are clear is the most significant discovery of the contractual relationship.

Our joint venture with the Navy would hardly have been possible even ten years ago and certainly not during the Vietnam War. But we are in a new era. This Nation has education and training problems of a very serious nature which can no longer be approached through isolated effort. In relation to defense preparedness and in relation to many of the manpower needs in American industry, there are ways in which the armed services and higher education can cooperate to meet the challenge of technological change.

Obviously, there are differences of institutional perspective, and there shall always be the need to protect institutional integrity. Serious education problems are not easily resolved. What we are focusing upon in the creation of the Skilled Enlisted Reserve Training Act, is an aspect of public education policy which would permit the armed services and this nation's community colleges to join in the exploration of educational delivery for meeting new manpower requirements. S. 801 is eminently sound, good sense legislation—good for the armed services, good for the community colleges, and good for the Nation as a whole.

WHERE THE COLLEGE IS AND NUMBERS SERVICED ANNUALLY

1. Great Lakes, Illinois Service School Command	30,000
2. Fort Sheridan, Illinois	800
3. San Diego Naval Station	3,000
4. Pearl Harbor Naval Station	1,250
5. Great Lakes Hospital Command	100
6. Great Lakes Recruit Training	300
Total	35,450

Additionally, 1,200–2,000 are served each year in off-duty education programs.

CLC/NTS PROGRAMS AND GRADUATES—FISCAL YEAR 1983

Propulsion Engineering	9,000
Basic Electricity/Electronics	7,000
Electronic Technician	3,700
Electrician's Mate	2,331
Gunner's Mate	2,500
Fire Control Technician	1,275
Instructor Training	1,350
Engineman (Diesel Mechanics)	511
Interior Communications	255
ART (Remedial)	1,600
JOBS (Remedial)	584
Total	30,106

Senator JEPSEN. Thank you, Doctor Hunter. Dr. Walter Muller, educational consultant. Doctor Muller, as I indicated, in my earlier remarks you have been closely associated in the drafting of this, is that correct?

STATEMENT OF DR. WALTER MULLER, EDUCATION CONSULTANT

Dr. MULLER. Yes, sir. What happened was I was given over $2½ million from the Army to go out and find 300 technical people. When I tried to spend the money, as it was under the wrong appropriation, I had no authority to spend it, and had to do something about it. At

that time Mr. Andrew Korim through Congressman Bailey [PA] was drafting the first version of this, and then we modified it to get this.

I basically see the bill as being a check or authority for the service secretaries to utilize funds, either through the transfer of their own funds or additional appropriation, to procure the required technical personnel to man the complex service.

I would like to take a few minutes and show you what the evolution of this is as far as what the requirement is. I know very well you are familiar with it. Mr. Etherton I know is. It wouldn't hurt to review.

During World War II, I was serving aboard a submarine that was built right here, by civilians, and it turned out to be the second best submarine in the war; we sunk over 100,000 tons of Japanese shipping. But it was a civilian Navy, there were only two regular Navy personnel aboard: Myself and the captain. Everybody else was people who had come in in the last several months. It was mobilized through the war.

As far as building the submarine, it was built completely by civilian industry, thrown in the river and drifted down the river. All right. It was a good submarine obviously.

What I found out then and in the ensuing 40-some years in my association with personnel is people are people. They are humans. You can train, educate, develop leadership from any source whatsoever.

It is the common goal of attempting to win something or do something that provides the synergism to put it together and be very effective.

Some years ago I was working on a program for the Navy, trying to develop a system to coordinate the use of instructors, equipment, aircraft, and so forth to optimize the flow of the training pilot through the system.

Incidentally, I might point out, that costs the Navy some quarter of a million dollars for the man to be instrument rated. I can buy that same man from the Spartan School of Aeronautics for $18,000. I might also point out the Spartan School of Aeronautics produced some 18,000 Army pilots in 1942, which won the world war.

It was those that won the war. They were civilians. They were out to win for our country.

Let's go back to some of our old approaches. We briefed a bunch of college presidents, all of them reacted in the same way you heard from Dr. Hunter, and that was we are concerned about our country.

They are not out to make a buck. There is no buck for them. The numbers we are talking about is probably 1 or 2 percent of their enrollment.

We are talking of possibly up to 200,000 people during the next 6–7 years at the very most. Why do we need that very most? Well, as I say, some years ago I had been moved over to look at the idea of what was the future of the Navy.

Basically what we were concerned about was that here were the services buying all kinds of equipment, aircraft, and so forth, and nobody was looking ahead at the timeframe in which it would come into being to see how it was going to be supported.

It takes about 20 years from the time we conceive an idea for an aircraft until the time it is on the aircraft carrier. We were trying to

anticipate. I found out that the biggest problem, when you ask people—"what do you see as the biggest problem?"—out of 285 people we interviewed, 284 said people, personnel, where is the personnel to man this?

Look what is happening with the Army. They are changing. They are growing. You say, fine, they are going to be up to 400,000, and notice the civilian requirement is just as grave in this requirement as the active.

I might point out, sir, that I was the personnel consultant to the Army chief of staff for personnel. The information I have is not releasable through me. A lot of the information I have has been laundered a little bit, but in no case has it caused any difference whatsoever in the results.

The information that is required is being gathered by the controller general. As you are probably aware, the Army goes—I know you are aware the Army in 1986 and 1987, the concept, we go to an electronic battlefield, and a military division that used to consist of 16,000 to 18,000 men, of which 11,000 were infantry, changes to about 23,000 men and goes backwards to about 8,000 infantrymen, a net gain of 5,000 or 6,000 in the technical field alone.

This conversion, this requirement to train to meet this type of system, goes beyond that available in the services. At the same time, the services' complexity is changing. We are not talking about the standard pyramidal structure of promotion. We are talking about a hump, that hashed area there in the E–5, E–6*6 technical area where we need these people that are available through this source, the community college.

There was a paper published in January of 1983 which points out that this is the major untapped source of personnel. I might point out, about the high school diploma, as far as the high school education demanded, the high school requirement is nothing more than that we have found there is a direct correlation between the propensity of a man to stay in the service for 4 years and the fact that he has completed high school.

In other words, it is the fact that if he has stuck with the school for 4 years, it is most likely that he will stick with the job 4 years.

Let's look at what the military has for options to obtain these people. We picked one particular school. This happened to be a skill alluded to by Dr. Hunter where he said the Navy is going to be dropping off a little bit on the seamanship and cleaning decks and loading ammunition.

This is the Army. The Army has more ships than the Navy. The Army has the total support requirement for everything overseas. As far as the Air Force is concerned, the Navy is there to protect the Army getting the munitions over to wherever the battlefield is for them to use.

Starting out at the bottom of the graph you will find out that the Army needed about 180 tugboat mates. Then they had a big jump, and then it dropped off, the solid line being the requirement. The dashed line is what they have and the attrition.

There is no way they have enough mates. There is no way they have enough captains. There is no way they have enough navigators. Yet these tugs are the same tugs manned by civilian manpower. These peo-

ple can come directly from the school, directly to take that job and work. All they need is the briefest military indoctrination to learn the difference between civilian and military justice and a little bit about military etiquette. But as far as being on a tugboat, they aren't going to carry a rifle and shoot anybody, it's a big waste.

Let's say what if they recruit more people? Instead of recruiting 250, we have to recruit 350. When we recruit 350, we have solved our problem as far as our mates are concerned, but then we end up with a terrible surplus. Everything that exists in this space here is wasted money.

If we take another approach and say, we will bring the man in and go ahead and give him a bonus to reenlist, that's fine. We get to another year, we give them this bonus, but it still hasn't solved this problem whatsoever.

What if they come along with this idea that we are going to take the man skilled trained to where the Coast Guard says he is certified as an able-bodied seaman, which is a requirement greater than the Army, and you bring them in as required at this position or this position or whatever position? What are we doing?

Well, we are filling the gap right here that we have. At the same time, we are doing a civilian or reserve training act. Nowhere in this thing does it say active duty. It says reserve training act.

It solves the immediate problem facing us, but it also solves the problem of what is available to us at the time of mobilization, and, more importantly, where it is going to come from to support this country.

One of the things, Senator, I know that you were interested in is the military retirement cost aspect. This goes right along with that. None of these people here fall into that retirement bill. They put in their 4 years and get out.

The purpose of a 2-year degree, as far as the Governor of Georgia is concerned: "I want these people back to develop the economy of my state." I find that is almost a universal approach. The fact is that the man meets the requirement, puts in 4 years of productive work (not going to school, not wasting his time). There are some skills like MOS 98 where a man spends his entire 4-year enlistment going to school and gets out.

The Army has grades and the skill level 2 to 4 training; they want to be able to develop the people, we want to retain what they have and to retrain people from old weapon systems to new weapon systems.

This is where the school system comes with such benefits. But the services have some concerns. They are worried about soldierization, skill transferability, marginal cost and competitiveness.

So the Army initiated a test to find people fully skilled and qualified and brings them into the service. Part 2 was to go out and find people for the computerized battlefield, the electronic technician.

What the Army was after here was to find people who had been educated at civilian satellite communication schools, give them a quick conversion onto military equipment, and put them on duty. Part 3, was at Redstone Military Arsenal where they were concerned with taking people who had basic physics, electronics, communication,

hydraulics, etc. and applying the transferable education to the TOW missile. There is nothing comparable in the civilian life to that missile.

Using the civilian acquired skill, the attrition rate goes to zero, whereas all the others I have quoted the attrition rate in the military schools runs to 50 percent. Second, the time rate reduces from 2 years to 42 weeks; from 57 weeks down to 17 in communications.

In other words, you are getting 3½ to 4 years of productive work out of a man. By taking a look at costs, the Army does have some extremely effective data. This table basically says what it costs for each phase as we bring the person through the training system.

This data is available. I'm not going to give it here. I'm going to use this to show what I am talking about as far as data is concerned.

Let's look at this return on investment plot. Over a period of time we bring a man in, at this cost, and this is the benefit or the return, we can approximate the cost savings for each required skill.

Now, we can argue a variance in savings, but it runs somewhere around $39,000 per man. You take the total amount of money that has been appropriated that is used for recruitment and divide that solely by the numbers of bodies that come in, you find, by coincidence, that it costs a similar number: $39,000.

We won't even consider that. We bring the man in and send him the BCT, $500 a week, and for so many weeks he is here. Then he goes off to his schools, A schools or B schools or something else, and he is here.

These schools, as I pointed out, can go anywhere from 12 weeks up to 3 or 4 years. Eventually he comes out of school, goes through some kind of learning curve on the job, up here, working, being productive, providing a positive return. This total area here is cost.

If I take the figures of bringing the man directly out of a community college, associate degree, basically he repeats this. He might have a small conversion period. Then immediately he goes into this. His learning curve is accelerated. He is much more mature. From here on we have this: a productive return.

The point at this which area equals this area, instead of it occurring out here after his enlistment is up, is somewhere around here, 30 or 40 weeks. The return on the investment of this money is pure business sense—why is it that industry uses this?

Dr. Hunter didn't mention in his testimony, but it's in his written testimony, that when he went out to get the people to staff his school, who were his biggest competitors? Industry trying to get the same skilled people. All we want or all I want is the authority for the service secretary to be able to compete with industry for that skilled man provided by the civilian school to come in the military and operate and support the equipment at that time, and then get out and support the economy of our country.

Thank you very much for your time, sir.

Senator JEPSEN. We will be asking, Dr. Muller, if you will provide copies of the viewgrams and the charts for inclusion into the record. If we can do that some way, we will work it out.[1]

[The prepared statement of Dr. Walter E. Muller follows:]

[1] Not available at time of printing.

PREPARED STATEMENT BY DR. WALTER E. MULLER, FORMER SENIOR STAFF SCIENTIST, INSTITUTE FOR MANAGEMENT, SCIENCE, AND ENGINEERING, GEORGE WASHINGTON UNIVERSITY, WASHINGTON, DC.

Senator, Jepsen, thank you for the opportunity to present some background on the need for the Skilled Enlisted Reserve Training Act (SERTA) submitted by Senator Strom Thurmond as S. 801.

Some eight years ago, while returning from representing the United States in a sailing regatta in the Caribbean, I missed a flight connection and was forced to remain in Miami overnight. Rather than waste the time on a few hours sleep, I chose to visit the maintenance hangars at Miami International Airport to observe their procedures. At that time, I was working on an approach to predict aviation logistics requirements for the Naval Air System Command. To my surprise, I saw a most productive maintenance system running smoothly with contended (nay, happy) workers. This was rather different from my military experience as an aviation maintenance officer. In conversations with the skilled mechanics, I found several key factors that were common to the workers: interest in the challenge of their work, ready availability of parts, and technical education—the latter being the most important. Of the small sample of 32 men that I interviewed, 5 were ex-servicemen that had received their initial technical training in the military and obtained their additional technical training through the GI bill; 20 had obtained their Avionics and Power Plant (A&P) ratings before coming to work, and the other seven had gotten their A&P through various other means (mostly smaller airlines).

As a consequence of these observations, I began to focus on personnel as a key issue in predicting logistic requirements. In 99 percent of the interviews with key aviation-related executives and logicians, personnel was mentioned as a future problem.

As a result of these interviews, I narrowed the scope of my research in predicting future logistic requirements to personnel requirements, and rapidly expanded my investigation to include all Navy needs and then the Army and, ultimately, the Air Force.

For the Navy, the research was concentrated on finding 10,000 skilled technicians in some 15 rates—about one-half of the shortfall of the required 20,000 technicians. My research efforts for the Navy were taken over by the Navy Personnel Research and Development Center and a test program called LEAP (Lateral Entry Accession Program) was initiated.

The Army heard of my research and asked me to develop and apply the lateral entry concept to the Army's needs as an evolution of their Stripes for Skills program. Six months' effort with the Army led to the provision of over two million dollars to obtain certain skilled technicians. But the money was appropriated only for training. It could not be used to recruit personnel from community, technical, and junior colleges or from other technical institutions, individuals who had already received expert technical training in foundation skills—without costing the service a penny. The authority to recruit and enlist such individuals is precisely at the center of this legislation—and it is one reason why it is so important.

My interest in S. 801 is to give the Service Secretaries the appropriation authority to obtain the necessary skilled technicians required to operate and maintain the complex weapon systems being rapidly introduced into the modern services—and to utilize the best source in the country for those skilled personnel: the graduates of the Nation's 1,220 community, technical, and junior colleges that exist in nearly every congressional district and the students in the more than 5,000 proprietary trade schools in this country.

In a Rand note prepared for the Office of the Assistant Secretary of Defense/Manpower, Reserve Affairs and Logistics (N–1946–MRAF) dated January 1983 on "Potential for Military Recruiting from Two-Year Colleges and Postsecondary Vocational Schools," Richard Shavelson, et al, write in their summary:

"A major goal of military accession policy is to recruit high-quality manpower into the All Volunteer Force. Although accession goals are currently being surpassed, this probably will not continue far into the 1980's. With economic recovery and decreasing unemployment, competition between the military and the civilian sector for high quality manpower will increase over the next ten years as job complexity increases with advancing weapon sophistication, enlistment standards are raised, and the pool of college age youth decreases in size.

"One way to increase the number of high-quality accessions is to recruit from as yet untapped markets that contain large numbers of potential high-quality recruits. One such market for accessions into either the active or reserve forces

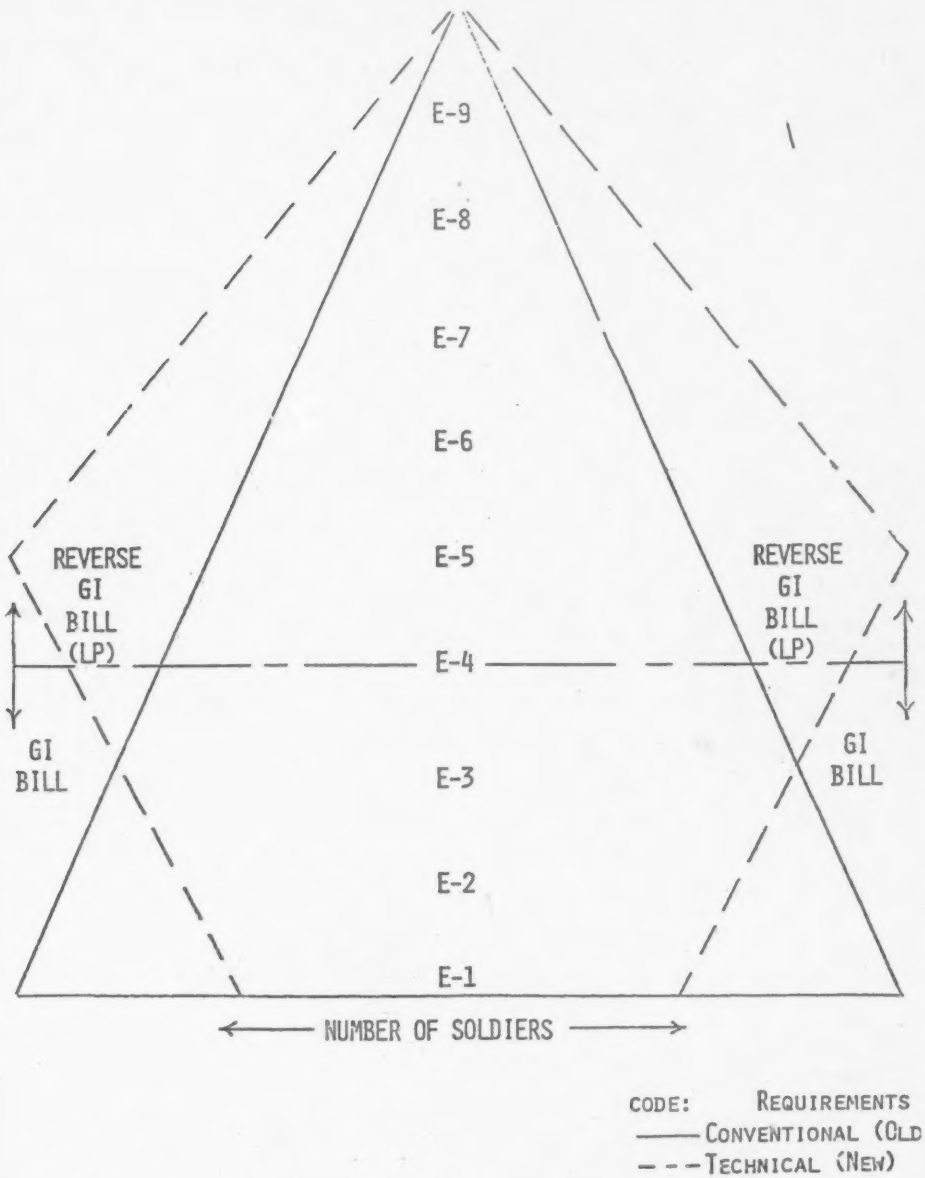
includes postsecondary educational institutions such as two-year colleges (junior and community colleges and vocational training colleges) and noncollegiate institutions (adult education centers, area vocational schools, private nonprofit occupational institutes, and specialized proprietary schools)."

Although the Rand note (and confirming research data of my own) show the vocational schools as an ideal source of trained technical manpower, I will defer to the school representatives to tell you the firsthand facts.

Nor will I repeat all of the research conducted over the past years that has been reported in my George Washington University Technical Memoranda which are available in the offices of Senator Thurmond and Representative Bennett.

Instead, I will highlight pertinent portions—starting first with the requirements.

Fundamental to the manpower problem within the military is the basic change in grade structure—from the typical, old pyramidal structure to a bulging diamond truncated at the base (see figure).



Illustrative of this change is the planned change from the present Army division of about 17,000 men including 11,000 infantrymen to the 1986–87 division of 23,000 men with less than 9,000 infantrymen—a net gain of 8,000 skilled technicians per division.[1] Total numbers will increase with proportional increases in the bulge.

Projected planning for the defense budget for fiscal year 1985 calls for $106 billion for the Air Force, $98 billion for the Navy, and $75 billion for the Army. The Navy is well on its way to a 600 ship fleet—it already has 515 ships on active duty and 110 more abuilding or under contract. But it doesn't have the skilled manpower to man the ships. The Air Force is preparing for the deployment of the cruise missile—but where are the required 10,000 or more skilled transportation specialists and mechanics coming from to shuttle the missiles among the various sites? The Army, planning to initiate high technology divisions by 1986 (its program is called Div 86), requires almost a 50 percent increase in technical personnel per division—at the same time that they are forming new light infantry divisions from existing forces.

When the Defense Department went to Congress this year for permission to recruit more troops, the Army asked for 2,600 more soldiers.

The Air Force asked for 21,000 more—about eight times what the Army wanted and more than double the requests of all three other military branches combined.

During the next five years, the Air Force estimates that its 593,000 person active force will have to expand by 91,000 people, few of whom would ever see combat in the event of war.

And if the country deploys 1,000 "Midgetman" missiles, which would be small enough to haul around on trucks, the Air Force would need an additional 50,000 mostly skilled technicians.

But the technician requirements of the active forces is only a small portion of the total. Similar numbers are required for the reserves. In fact, the issue may be even more important for the reserves. Many experts believe that we have too many active duty personnel and that these numbers are costing the country much more than is necessary. They believe further that we are not using our reserves properly, that they are not adequately trained and ready for active service in the case of emergency. Les Aspin, D-Wis., Chairman of the Subcommittee on Military Personnel, is among this group.

In addition, it is obvious that requirements are increasing for skilled labor in the industrial sectors required to provide the materials and supplies of the Armed Forces. The Defense Economic Impact Modeling System, driven by the defense dollar, shows average annual growths of about 15 percent in skilled manpower needs for the civilian industrial base. As stated in the bill, "the economic vitality of the United States would be strengthened through the establishment of such a program by increasing the number of persons having technical skills required to broaden the industrial base of the Unitied States in critical skilled technical fields in which shortages have developed."

Senator Jepsen, there is much continuing interest on the Hill about three issues: the GI bill, the unfunded military retirement program, and the Defense budget. I would like to take a few minutes for some observations on those issues as related to S. 801.

The GI bill had as its purpose and was used as a means for demobilizing a wartime civilian Armed Force of over 5,000,000 men and women and provided for the resurgence of the Nation's economy. The need now is not to demobilize—but to mobilize and to save money. The Skilled Enlisted Reserve Training Act, as the "Up Front GI bill," does that. It provides for the four year service in the military of a productive technician and then a lifetime contributor of an experienced skilled technician to the economic growth and prosperity of the United States—at a very minimal initial cost. In essence, it provides the Service Secretaries with the authority to compete on the open market for skilled technical graduates of vocational/technical schools on the same basis as industry—reimbursement for education and skilled training and placement in a military occupational specialty MOS at a grade commensurate with their skill. The concept is basically sound because it operates on the free market principle that is fundamental to our economy.

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[1] Please note that all numbers—for security reasons—given throughout this paper are approximate and used for illustrative purposes. This fact does not affect the logic or significance of any of these findings. Exact numbers are being obtained by CBO and OMB.

Much is heard about the unfunded military retirement program and the efforts by the Congress to restrain the growth in costs, e.g., the penny saving efforts of Senators Boren (D-Okla.) and Durenberger (R-Minn.) to reduce future cost-of-living increases by three percent below the CPI; the current action by the Senate Budget Committee on the Budget Reconciliation Bill to include a cost-of-living adjustment delay for retirees until January 1, 1985; and two House panels (as well as the House Armed Services Committee) looking at military retirement—the House Budget Committee's Task Force on Entitlements, Uncontrollables and Indexing (Donnelly, D-Mass.) and the "Edwards Committee" of the Republican Conference Committee (Edwards, R-Fla.).

S. 801 and H.R. 1937 get to the core of the retirement program while improving the readiness of the Armed Forces—a smaller number of retirees. The Skilled Enlisted Reserve Training Act provides four year productive enlistees in the E–4/E–6 bulge who then contribute significantly to the civilian economy and permit pyramidal advancement for the core military careerist—and do not become a part of the increasing military retiree pool.

The Defense Budget is large but too much time and money is wasted in saving piddling amounts such as cutting incentives for career personnel, e.g., the Chairman of the Senate Appropriations Subcommittee on Defense's (Stevens, R-Alaska) effort to remove flight pay from some 1,600 0–6's and above throughout the services, the House Appropriations Committee's deferring funding for some military personnel programs that had been authorized to begin October 1 (dependent student overseas travel, the Individual Ready Reserve Bonus, special pay for fuel haulers, government transportation of remains of military retirees who die in military hospitals, etc.).

A member of the House Armed Service Committee's Subcommittee on Military Compensation and Personnel (Skelton, D-Mo.) has warned (according to Randall Shoemaker reporting in the Navy Times, October 31, 1983) the cuts will be made will-nilly on the floor of the House and the Senate by lawmakers "with no knowledge or concern over the real impact on the services."

Any cut in compensation, according to Captain Thomas N. Hale (Ret.), former head of the Compensation Policy Branch, Office of the Chief of Naval Personnel, will drive up other costs. If you take away part of the service members' compensation and do not balance that by adding the equivalent value in other benefits, the service will not save money but will incur equivalent or higher costs of other kinds. Turnover may cause training costs to rise; readiness will decline; other projects to rebuild morale will be costly, etc.

It is my own conviction that SERTA could save hundreds of millions of dollars, even billions, annually in military accession, pay, training, and retirement costs, and at the same time give the services more able personnel, better overall staffing. Working more closely with the vast network of community, technical and junior colleges and the other technical and vocational schools that can meet the standards of the program is bound to give the services access to streams of talent that are not being reached by their current recruitment programs.

The Skilled Enlisted Reserve Training Act has the potential of saving more than ten times the total savings of all of the other cuts combined—at no equivalent costs of other kinds. Quite the contrary, the equivalent value of "other kinds" will increase: training, readiness, morale, etc.

These savings, and the logic and calculations to support them, are appended. It is noted that the cost estimates were reviewed by the Congressional Budget Office (CBO letter dated October 26, 1983, to the Honorable Les Aspin, Chairman, Military Personnel and Compensation Subcommittee) and that the reviewers agreed with the economic formulation but stipulated—"because of lack of data"—that CBO is "unable to substantiate Dr. Muller's estimated cost savings of $50 billion for fiscal years 1974–1988 that were to be achieved through the use of civilian educational institutions."

Similarly, the Comptroller General of the United States, in his letter of November 8, 1983, to the Honorable Charles E. Bennett, House Armed Services Committee, commenting on the same cost estimates, writes: "Concerning Dr. Muller's analysis, although his economic approach appears reasonable . . . we can neither validate nor refute his findings."

It is further noted that as Personnel Consultant to the Army Deputy Chief of Staff for Personnel I had access to data not readily available to others. Irrespective of the data, or lack thereof, sensitivity tests demonstrate conclusively that significant cost-savings will result from passage of S. 801.

Mr. Chairman, this is an important bill, one whose positive influence could reach several segments of the country, including the military services, both active and reserve, the civilian defense industries, and local and national economies. It makes good sense for the United States.

Thank you, Mr. Chairman, for the opportunity to share my views and my long-term research with you. I would be happy to provide additional assistance in the future if you desire it.

Senator JEPSEN. Mr. Lyle Darrow, vice chancellor, Alabama State Department of Post Secondary Education. Welcome to Iowa. You may proceed.

STATEMENT OF DR. LYLE DARROW, VICE CHANCELLOR, ALABAMA STATE DEPARTMENT OF POSTSECONDARY EDUCATION

Dr. DARROW. Thank you, Senator Jepsen. I have found this a very invigorating climate the last couple of days. I want to thank you for the opportunity to present my views to you today on what I feel is a need for the Skilled Enlisted Reserve Training Act.

Although I will share with you today some of my thoughts on Senate bill 801, I feel that my main contribution perhaps could be in responding at some later date to material that various services will be presenting to you in support of their objections to this bill.

In my testimony this morning I will try not to repeat materials presented by others appearing before you or materials that I am assuming that are available to you, but rather to relate what I feel is pertinent to my areas of expertise and experience.

I had the very rare privilege, I feel, of spending over 27 years on active duty in the Air Force as both an enlisted person and as a commissioned officer.

I have undergone technical training. I have taught technical training. I have worked very closely over the years with technical training graduates, both as a pilot, as a commander of installations in Germany, in Norway and in England.

I have been heavily involved in Air Force technical training in my prior capacity as president of the Community College of the Air Force. I have been involved in the administration of both junior and senior ROTC programs.

I currently oversee the operation of 43 2-year colleges, a bachelor's degree-granting institution and the Alabama Industrial Development Training Institute, which provides state-of-the-art training to industry throughout the State of Alabama.

As you are well aware, several services have been relatively successful in meeting recruitment quotas during the recent past. However, with the forecast decrease in the number of high school graduates, the number of high-school-age people in this country, and the improvement that we are seeing in the national economy, I feel that the favorable recruiting environment will be diminishing.

These services must implement realistic alternative programs to entice young people into the various services. Senate bill 801, I believe, will provide an excellent method to accomplish that.

This bill would also fill the gap between junior ROTC, a program offered by all the services for high school students, and senior ROTC, which is designed for primarily 4-year college students by offering a viable program for the many thousands of young people in the junior, community and technical colleges throughout our Nation.

All the reasons that have made these junior and senior ROTC programs a success should equally be applied to a future 2-year college ROTC program.

Now, we are fully cognizant of the fact that several services have a well documented need for technical training. Some of this training we know is job specific and requires training with equipment used exclusively by the military.

Training with such equipment can, I'm sure, be best done specifically by the military, but the vast majority of technical training done by the military is duplicative of that offered by the Nation's 1,200 plus 2-year colleges.

It is important to note that such training can be accomplished by civilian institutions at a much lower cost, especially when one considers the true cost of technical training done by the military.

Now, I'm sure the various services either have or will be furnishing you figures regarding the cost of technical training, but I'm also sure that these costs will not reflect the true cost of training.

Now, I'm not going to try to explain my opinion of the true cost of training, but just as a very, very quick, rough overview, if one takes the annual training cost of operating an entire installation, and then subtracts out the cost of operating any activity on that installation not directly involved with technical training one will get an estimate of the true cost of training. Keesler Air Force Base, MS, is a typical example of an institution developed almost exclusively to technical training.

Keesler has the expenses of a hospital, motor pool, accounting and finance activity, fire departments, security police departments, legal departments, commissaries, enlisted and officers' clubs, dormitories, cafeterias, bowling lanes, movie theaters, et cetera, all of which are part of the true cost of technical training.

The entire cost of operating that installation, minus any nontraining activities, is, I feel, the cost. Now, so much for at least a brief look at the cost of training.

Now look at the opportunities of such training being done by civilian institutions. I maintain a 2-year institution in this country can provide the technical training for the majority of the specialists needed in the Armed Forces.

All the basic skills used by the military in the various, I'm going to call it trades, plumbing, carpentry, sheet metal, welding, automotive mechanics, are skills directly transferable to the needs of the military.

Other military skill areas, electronics, computer science, paraprofessional medical, et cetera, have as their core or foundation the same skills taught by civilian institutions.

For example, avionics technicians start their training in and the major parts of their training are basic courses in electricity and electronics, the same courses that are taught throughout this country.

In addition, the services employ many thousands in allied or service-oriented fields such as dental assistant, radiologist, administration, budget, accounting, supply, basic office skills.

Now, this training is usually a direct duplication of training available at civilian institutions. Certainly little valid argument, I think,

can be raised against allowing civilian institutions to provide such training.

In addition to providing technical training at a significantly lower cost and in civilian institutions, which I feel will bolster our democratic citizen's soldier concept that we foster in this country, there is a real bonus that many people seem to overlook or perhaps choose to ignore.

In addition to technical courses that will provide the knowedge needed to perform a specific task in their military skills, the S. 801 student will be taking such things as science, communication, English, mathematics, physics, management, and other general education courses.

These are the courses that are not providing specifically technical training. The Armed Forces technical training is hands-on skill training. The junior college training is a composite, a program that provides, in addition to the skilled training, a general education component.

Now, courses such as these are of immeasurable value as these young people will soon become supervisors and later, noncommissioned officers who will need to be effective managers, public speakers, writers, communicators.

This need is accurately reflected in a passage written by Gen. Bennie L. Davis, Commander in Chief of the Strategic Air Command:

> **Our enlisted force must be prepared for the demanding responsibilities in a changing technological Air Force. The Community College of the Air Force offers this preparation through job-relevant, academically sound educational programs which develop the personal and professional skills necessary to meet the demands of an increasingly complex mission.**

Now, this last portion that I say is often ignored is actually what the services are asking for in so many of their other requests. They need managers in addition to technicians.

The young person who is provided with adequate technical training to perform their specific military tasks doesn't do that very long. They soon become supervisors. They may become on-the-job trainers, training one or more other young people who follow them perhaps 6 months behind in their training.

In a very short time they are looking over shifts, and they need to be able to communicate. They need to have skills to relate to one another.

One of their main sources of increasing and maintaining their knowledge is through reading technical orders and documents. To do this they have to have some very good communicative skills.

I think the general education component perhaps all by itself could be the selling point of trying to provide this training.

In any case, Mr. Chairman, I want to thank you for the opportunity to share my concern with you today.

Senator JEPSEN. Thank you, Dr. Darrow. Now Evan Hultman, major general, retired, former immediate past president of the Reserve Officers Association of the United States, native Iowan. You may proceed, Mr. Hultman, in any way you so desire.

STATEMENT OF EVAN HULTMAN, MAJOR GENERAL, USA (RET.) RESERVE OFFICERS ASSOCIATION

Mr. HULTMAN. Thank you, Senator Jepsen, distinguished colleagues and those present who are most concerned with the status of our Armed Forces and its defense of freedom, and certainly our economy as has been indicated here and its strength in terms of what it means to war and the very critical role of education in that process and in that defense.

I do want to correct the record at the outset, Senator, because it's going to impact on the remarks that I make. I am still an active reservist commanding the 88th Army Reserve Command, and thus I want to make a disclaimer at the outset in light of that that I'm not here representing in any official capacity the Department of Defense or any of the agencies of the Department, and thus my remarks in no way should be construed to express any position by the Department of Defense or the U.S. Army, Active or Reserve, but my remarks here represent the position of approximately 125,000 U.S. Army Reserve officers, both Active and retired, and their position with reference to the Senate bill we are analyzing here today and discussing.

As the past president of that association, I think my remarks could be most briefly summarized by a reading of the resolution that this organization passed at our most recent convention and which I was one of the active participants, both as far as this particular resolution and that convention adopted at their national convention on the 25th of June of this year.

I think also were I to try and summarize beyond the resolution itself, I would be repeating the very clear statements that have been made in depth by my colleagues at this point. This resolution is in support of enactment of Skilled Enlisted Reserve Training Act, the act that we are concerned with here.

Whereas the combat readiness of our Nation's Armed Forces is becoming increasingly dependent upon the ability of technically skilled enlisted personnel to maintain and operate technically sophisticated weapons and systems; and

Whereas, the number of technically skilled enlisted personnel in each of the Armed Forces, both on active duty and in the Reserve Components, will have to be increased substantially in the near future to maintain and operate the sophisticated weapons and systems being introduced to modernize our Armed Forces; and

Whereas, according to population studies, high school graduate numbers will decline; and

Whereas, the Active Duty and Reserve Components of the Armed Forces will face an increasing problem of recruiting, training, and retaining highly skilled enlisted technicians to operate and maintain sophisticated weapons and systems; and

Whereas, in many technical skill categories in the Armed Forces, training consumes over half of the initial enlistment; and

Whereas, many Reserve Component elements of the Armed Forces with high priorities for mobilization, have critical shortages of essen-

tial enlisted technicians, particularly because the Armed Forces are not budgeted to provide sufficient training school quotas; and

Whereas, a special entry technical training program would provide an incentive for enlistment of qualified personnel into the Active Duty and Reserve Components of the Armed Forces; and

Whereas, the shortages of qualified enlisted personnel could be alleviated at a reduced cost to the Government through a program in which civilian community colleges and technical institutes would provide training to individuals who would enter the Armed Forces for service in pay grades commensurate with that training; and

Whereas, Senator Strom Thurmond and Congressman Charles E. Bennett have introduced the Skilled Enlisted Reserve Training Act, S. 801 and H.R. 1937, which would provide training by community colleges and technical institutes in exchange for a commitment on the part of the enlistee to serve either 3 years on active duty or 6 years in the Reserve Components after completion of training;

Now, therefore, be it resolved that the Reserve Officers Association of the United States supports the intent of the Skilled Enlisted Reserve Training Act and urges its enactment.

I might just by way of a footnote, because I think what has been said in this resolution has been very eloquently and very factually presented here by the four present members of this panel, I might indicate to you that from my own personal experience as an enlistee in World War II, I had the privilege of having 1 short—not 2 years, but 1 short semester of advanced training from high school while I was still 17 before I entered the service at 18.

I can say to you here without any question that very brief period of advanced training in the technical areas basically that we are talking about here gave me a leg up without question, in every responsibility that I had from that time on as a private in the infantry up to sitting here today as a major general commanding one of our major Army Reserve commands.

I can also say to you as the immediate past commanding general of the 103d Corps Support Command, which was the first COSCOM in the Army Reserve, organized in the Army Reserve, that I am very familiar with the need that exists and will continue to exist in even greater measure with the kind of skilled personnel that we are referring to and seeking to find in this particular bill.

As a bottom line, in my judgment, three very critical factors will be served by a program of this kind as these men have discussed it in far greater eloquence than I can.

One, it will meet the military need, which is outstanding today and which is the greatest military need of all, and that is to have trained men and women trained in the most advanced weaponry because, without any question, the only basis upon which freedom can succeed is a military force of strength which is primarily strong in superior technology.

There is no way in the world in which the fighters of freedom as defended first by this Nation can match the Soviet Union or the particular nations represented in that pact by numbers. There isn't any question about that.

That has been the case of our history of our military fighting. It is only by first superiority of weaponry. When I say weaponry, I mean

all the areas of weapons, not just in the hands of men and women in the combat service, but also support service.

Second, there isn't any question about it, that the long-range ability of this Nation in the area of our defense industry has got to be in a position again to have superiority or, again, we will not have the strength in order to deter war and make sure that freedom continues.

Last, it will ensure that the overall economy of this country will be spurred in the way in which it must, not by grants and doles but by putting skills in the hands of people that they can produce and thus create jobs not only for themselves but for all those consumers who flow from that job.

Of course, the bottom line, which must test everything here and certainly will test the actual program and how it should be implemented is to make sure, absolutely sure, that the most effective use of the taxpayer dollar is used.

I believe that this kind of program will meet all of those first three needs as well as the bottom line, cost effectiveness. Thank you.

Senator JEPSEN. I thank you. We are moving along at a pretty good pace here. I do have a number of questions from the panel that I want to explore. At this time I would like to take a seventh-inning stretch. We will recess for 3 minutes here and regroup in about that time. Thank you.

[A recess was taken.]

Senator JEPSEN. The testimony this morning was some of the finest testimony that I have had the opportunity to hear over the years. It was very informative and was most impressive, not only concerning the statistics but also the experience that has been brought into focus on this particular bill, and the recommendations accompanying it.

As was stated earlier this morning, I do have a number of questions. We will proceed for approximately another hour, or less if we run out of questions or exchanging ideas here, but I would expect to adjourn at 11:15.

Dr. Muller, or any of the witnesses, but I might start with you, could you provide us for the record, the information that would break out or break down those military and technical occupations which are so similar to civilian occupations, in your opinion, that there would be need for little or no modification of the current curricula available at civilian institutions?

Dr. MULLER. The answer is yes, I do have available to provide to Mr. Tucker or Mr. Etherton a breakdown for every MOS within the Army. I have the same for the Navy as far as the primary skills. The Navy, where they first had this problem, where they asked me about 4½ years ago, addressed the shortfall in 19 petty officer ratings or skills.

This was the time when ships were coming back from the Mediterranean, for example, and the ships scheduled out to replace them could not sail because there was not the qualified personnel to man the ships.

They were actually pulling the skilled men off the returning ships, not giving them any shore time, sticking them on the next vessel and letting them go out.

These statistics are available. They run the spectrum of everything you heard. Incidentally, a technician is any skilled grade. He can be a

stenographer or a medical corpsman, a dental technician or a computer specialist, a hydraulic specialist, whatever.

It is a skill that requires training normally above and beyond that of a high school person.

Senator JEPSEN. Now, would anyone else like to comment on that? I might put a broader perspective in this by asking the question in reverse. What obviously can't be done? What obviously can't be done at a civilian community college type facility versus the active military?

Mr. HULTMAN. Senator, I think looking at it from an Army point of view for just a moment, I think it's representative of all of the services. The great strength that has come in the last few years in the development of our Armed Forces, without any question, has been that the fact that we have in the reserve side of the House for which all of the armed services now depend so much more greatly, and we now are not reserve in the old reserve sense of the word.

We are path of the ongoing, if something happens this afternoon, as you men all well know, has been the fact that we have in the reserve side of the House taken advantage of those skills that are already there, and, thus, in the Army approximately two-thirds of all the combat service support of our active establishment is in the reserves, and that has been wise.

It's the wisest use of the taxpayer dollars, in my judgment, that has happened in our lifetime, let alone maybe in the history of our military defense posture, so we are doing it.

Now, by the same token, there are the skills you are now talking about that are not found in civilian life and thus not taught in civilian life, and those are basically the combat skills.

In the Army, for example, there are all kinds of truck drivers out here who are experts on the highways' ice this morning. You can't take somebody who hasn't had that skill and teach it to him and do it cost effectively.

You teach those skills in civilian life, and you take advantage of them, but a tanker who fights with an M–1 tank is not out here in civilian life, and Kirkwood or any other college or university cannot produce those key people that are in that tank, so you can kind of separate, it seems to me, those hard skills in terms of the fighter killer maybe is the proper word from all of the rest, but even in those instances of those combat skills, these skills we are talking about here are still basic in the instance of being able to make them more effective ultimately.

There are what you might say a beginning level skill but not a finishing skill. I think a very basic place you can separate them is in that type of category, one, the killer-type skills, tanker, et cetera. There are none of them out here in civilian life, and no reason for a community college to teach those type of skills.

In preparation for that skill, there are other basic skills that either must be taught in the military, and I think at a much higher cost in dollars, and also it robs the military of that individual's availability at an earlier time for that ultimate polish-off skill, so I think in response to your question, you could divide them fairly simply at least into that kind of category.

Senator JEPSEN. Dr. Hunter?

Dr. HUNTER. Sir, in order for this training to be maximally effective, there is an articulation required between the armed services and the institutions which should enter into the program. There are stages of training.

The community college can certainly provide in any accredited electronic technology program, for example, all of the basic education, theoretical substance, all that is necessary to produce a qualified electronic technician.

There is a final stage, however. In order to make an enlisted person completely ready, this stage would have to be provided by the armed service. I am speaking of the orientation of the electronic technician to highly sensitive, sophisticated equipment which is usually taught with top secret clearance. In other words, the ET must have a follow-on stage of training in order to be totally ready.

That does not seem to me to present a problem. There are tremendous cost savings that could be realized if we were using the community college electronics programs.

However, in order for the serviceman to be completely trained, we could not ignore that last stage of orientation, which the community college could not provide.

Mr. NEWTON. Senator Jepsen, I was going through some of the courses that might be available right here on this campus, and just to list a few that come to mind, and I'm sure there are many others, we have some 69 curricula offerings, but in the field of accounting, clerical, word processing, allied health, truck drivers, we have a truck driving program down here, truck and auto mechanics, technological component work, electronic technicians, food service, pre-engineering, those kinds of things.

I think the services use each and every one of those in various categories. They are all available and on stream right now at this campus as well as the bulk of community colleges across the country.

Senator JEPSEN. Dr. Hunter, you gave, I thought, a very good example of manpower shortages in the current All-Volunteer Force, when committed to one mission. At the present time we have more than one going. You gave the example of teachers in the Navy who were teaching emergency medical training and who then had to go into the Middle East. That sort of left a vacuum into which you were ready to step and fill the breach. This is an example of what not only can be done to achieve a high level of readiness, which has been the primary thrust of everything discussed here this morning, but going one step further to provide a backup in the event of a mission of any size. You would have added reserve capacity to train new folks as they move in over and above the ones that were there, so that even the instructors could be utilized for the mission.

That's a good point. I wanted to reinforce it. I wanted to make sure it was put in the record.

Dr. HUNTER. Could I add one more statement to it, sir?

Senator JEPSEN. Please.

Dr. HUNTER. What I would like to stress there is that that program is being developed in very close consultation with the hospital command. In fact, the initiative was taken by the hospital command to contact us.

There seems to be a connotation that the community colleges will be imposing upon the armed services in this training. That is not the case. When you see the relationships in practice, it is not difficult to form a professional partnership.

Senator JEPSEN. I appreciate that. Again let the record show there are some very distinguished military careers that are represented here today in the capacity now of private citizens, supporting the civilian aspect and utilization of civilian facilities for better readiness. This does come from the desire by a civilian unit of education to gain higher numbers in enrollment or more income, but the sincere desire to provide for the same thing we are all interested in, and that's the national security of this country.

I think the fact that the distinguished military careers of a number of you here on the panel today came first, and that you were active duty combat soldiers, sailors, and Air Force folks before you were educators is something that we want to keep in the record for a proper perspective.

Now, having said that, I was told yesterday by a dean of education at one of the community colleges in Iowa that they were asked by the Navy to lower the level of teaching of technology in some courses.

They said they had been advised they would have to lower the teaching levels of their technology courses because it was more than necessary for what the service needed.

Now, when this particular individual told me about this I thought in my own mind that somebody must be misunderstanding something somewhere.

Either he misunderstood the request which he said he had in letter form, and I did ask for a copy, or a person from the service, and it happened to be the Navy in this instance, either did not understand or did not want to understand what they were trying to do.

I can't imagine any branch of the military service in the initial steps of exploring the possibility of working together with any educational institution, telling that institution that they were going to have to lower the level of their teaching of technology because it was more than necessary.

I want to pursue that a little bit. I think one of the things I have noticed from the beginning is that when we had this piece of legislation assigned to my committee, the feedback was that there was some reluctance on the part of the established military to look at this with much enthusiasm.

I think we ought to explore that a little bit here. Everything will be asked on a constructive and positive basis. Can any of you shed any light on why anyone would want to say that you have to lower the teaching of technology because it was more than necessary for the service?

I can see a problem in that there might be an advanced technology level that isn't needed, but I can't imagine that the military in any way suggested that the school ought to change its curriculum.

In fact, the school as you visualize it, wouldn't need to change any of its curriculum. It might develop some new, coordinated program to provide the specific training needed by the services or the reserve units stationed nearby.

But I can't imagine one single reason why the military would immediately want to go into the basic curriculum of a school and say they want to change it. Can you?

Mr. NEWTON. Well, Senator, the only reaction I might have as a trustee at this college and 10 years of experience or 11 that I have had around here is that there have been times when perhaps we had folks that were overtrained.

Maybe all the private sector wanted was a person that could run a bead down a piece of metal and didn't need to know the metallurgy or things that happened because of that particular skill, but as I stressed in my testimony, flexibility has been the hallmark of community colleges.

If the Navy thinks the folks are overtrained, these colleges are flexible enough to make those alterations. If it takes too long to train someone, we have programs that run 3 months or up to 2 years. Flexibility is built into that.

I don't know if it's a criticism of the military or the community college system. If the military's needs are less than what is suggested, the courses can be altered, and it's not really a big deal.

Senator JEPSEN. Dr. Hunter?

Dr. HUNTER. Sir, I believe it's extremely important to protect the academic integrity of the community college curriculum. I don't really see why there should be a problem in that respect.

The view that you have reported seems to connote that the Navy's training needs are static, that they are not going to change, that there is not an adaptation that will be required. That's hardly the case.

Day by day there is new high-tech equipment coming into the inventory, so the training must evolve and develop, and, frankly, in my experience, I have not come across that kind of argument in the field.

It's well recognized at the Service School Command at Great Lakes that the Navy's training needs are evolving and that, therefore, a substantive theoretical background in an area like electronic technology is very helpful.

Senator JEPSEN. Any other comments?

Dr. DARROW. Yes, Senator, that report somewhat surprises me. I can only perhaps speculate that the training was required for any specific skills or, I guess, ratings as they call them maybe.

I would think—I would speculate that one of the general comments from the Armed Forces is going to be just the opposite of that, that the 2-year colleges in this country are not state of the art. I think that's going to be a major point.

I think in that point what they perhaps are talking about is equipment used for training. If that is their point, they do have a partially valid criticism.

For example, the military training, as I understand it, uses state of the art equipment. If it's a jet engine that's part of a course, it's a jet engine that has either recently been in operation or a recent model, whereas predominantly in the civilian institutions it will be an older model jet engine because of the cost of acquisition, so I take your comment as certainly valid, but I think categorically that the response will be that we are not as state of the art in equipment. That's valid.

That does not in any way take away from the fact, for example, since I brought up jet engine mechanics, that the training for jet engine mechanics is composed of basics which the airline used, the school that was mentioned in Oklahoma uses, and whereas they may not have an engine out of an F–14 or an F–15, the engines that they have certainly use the exact same principles, and, more importantly, the service and maintenance is exactly the same.

Tolerances may vary and temperatures may vary, but the procedures are exactly the same because our corporate flying activity in our civilian airlines are using not only state of the art engines, they are using engines that exceed the state of the art in the military because they are throwing in another quantitative factor of economy.

I didn't address your question exactly, but I did want to express my views on what I am calling state of the art.

Senator JEPSEN. My question is hard to address. I wanted the record to have a flavor of this. I think there probably are going to be instances where there is testimony on turf battle, concerns, and frankly, there are some of those in the educational ccommunity who are not themselves very supportive of the military.

I suspect that maybe we must examine everything that is submitted by both sides. We need to check these allegations out.

As General Hultman can attest, we served together many years ago in the military, and generally I try to separate wheat from the chaff, and palaver from sincere discussion, and try to provide a realistic appraisal rather than a biased one.

In other words, let's be candid and not beat around the bush. When we are trying in good faith to lock arms and work together for the identified goal of national security and a high state of readiness.

That's what we are looking to build here. Can we do things better? Can we do things more efficiently? Can we arrive at that goal with a better situation for everybody concerned when we started?

The issue of cost savings comes to mind and is one of the paramount issues in the consideration of Senate bill 801.

Dr. Mueller, you have done some studies which show the savings of $50 billion over 5 years. I would at the onset say that that is a staggering figure.

Dr. MULLER. That's right.

Senator JEPSEN. That's right. I assure you all my colleagues on the Armed Services Committee will be impressed. I would also note the Congressional Budget Office was not able, as you point out in your testimony, to verify these savings.

In their report to the House Armed Services Committee in October of this year, they listed several concerns with your estimates and with your methodology, and I would like to go over these and ask for your comments specifically.

On page 6 of the report, they state that, and I quote, "Dr. Muller's estimate that the program would save the Department of Defense $50 billion over 5 years seems unreasonably optimistic. To achieve his average savings of $10 billion per year for 5 years, more money would have to be saved than is currently being budgeted for initial military skill training."

I will start with: Is this an accurate statement?

Dr. MULLER. It's a very conservative statement, Senator. It does not include some of the other things I have told you about, future retirement funds or anything else. That is strictly the use of two numbers.

It is what it will cost you to procure the gentlemen, technically skilled trained men, average age 27, mature, ready with supervisory leadership, everything required in the military, to step in as an E–4 or 5 to fill a skill that is transferable, such as a tugboat, such as a mechanic, FAA certified—incidentally, that mechanic is well trained above and beyond the requirements of the military.

A little side issue, I stopped at Charleston Air Force Base where they were teaching NCO's that were about to retire to be able to go out and pass the FAA test for A&P certification so they could leave the service and get a profitable job outside; not to stay in the service, not to perform their job better, not to provide greater safety and support, but to prepare the man to get a job outside because the skill qualifications and requirements outside, as established by the Federal Government, are greater than the military demands. Let me back up.

Senator JEPSEN. That applied to my last question, so there is a thread.

Dr. MULLER. Everything is tied together.

Senator JEPSEN. There is a thread of validity in that statement.

Dr. MULLER. Absolutely. There is another part. The Governor of Georgia wants them all to have an associate degree. Essentially, what the military is saying, why do I care that they learn Georgia government or Georgia history, which is 6 hours, but it's a bonus of the other aspect of what it is, and that is the economy of the country.

What happens is that after 4 years productive service in the military, he goes out to become a productive asset in civilian life that builds the tax base and the support that we need which is what the general keeps referring to.

Back to your question about savings, we are saying it will cost about $6,000 to bring a technically trained man into the service as an E–4 or E–5. I'm saying it costs about $50,000 across-the-board average currently to bring a man into the service, recruit him, support him, train him, educate him, and put him at an equivalent level than I can bring the man in out of the civilian school.

There is a saving of about $46,000 per man. What that money is, the money alluded to here, includes salary and all the other support costs that go into this.

The military training costs range anywhere from $12,000 a year per skill up to $142,000. I'm talking that the highest that I'm finding anywhere in the community systems is in the order of several thousand dollars. I have used a very conservative number of $8,000.

I have merely gone ahead to the 1986–87 conversion and said this is the manpower numbers that are needed by that timeframe phased in over the 6-year period. I have then taken a very conservative number for the Navy, and a much more conservative for the Air Force—and I have not pointed out that the Air Force could have a requirement of as many as a 100,000 men to do nothing more than support the missile mobility concept that you are talking about in the Congress.

You need 20,000 diesel mechanics right now to move the missiles around northern Europe that are being positioned over there. The Air Force doesn't have them, yet they will build up their training sup-

port systems to convert a 17-year-old kid that doesn't even know how to drive a truck into mechanics when they are already available from civilian technical schools.

In addition to the 1,200 community colleges we are talking about 7,000 private dollar making vocational technical schools that make these people available to the skill level above that which the military requires.

I have taken that number, and I have taken the same that you heard from the general, which is the Reserve component. When I take those requirements and multiply them out, it is $50 billion. It does not say one thing about the fact that we need almost that same number for the industrial base.

The Department of Defense economic impact model [DELMS] points out that we need an annual growth of some 50 percent over the next 5 years to support our procurement budget. It points out by areas what skills are going to be required at what level to support the build-up that we need. That is not even in the $50 billion cost savings.

I am talking strictly about the savings to the military. Now, where they say the figures are not available, it's merely a lot of hogwash. They have not taken the time to get the information, and, frankly, I doubt they will get it within 3 years because the military is very good at skirting information of that nature because they think that you are threatening an empire.

Senator JEPSEN. I am going to be as careful as I can at this point not to take sides. As chairman of the committee, I am trying to bring out facts. I would like to explore it a little further because I do, frankly, respect and am quite impressed with your figures and the amount of work and expertise that has gone into this, combined with the experience that you have.

I would like to explore another part of the report, which you have just addressed, but more specifically. The report goes on to say that,

> Doctor Muller developed a figure that represents the savings per Army trainee from using the new program instead of current technical training programs. This figure, $55,000, per trainee, is the building block of the Muller estimate.
>
> The civilian cost figures per man excluded some costs applicable to trainees under H.R. 1937, the House version of S. 801, such as student stipends. The average civilian cost was not adjusted upward to allow for dropouts among the students while in school or after entering military service, although the average cost for military trainee was.
>
> Finally, the average cost per military trainee reflected recruitment and reenlistment bonuses, but Dr. Muller's savings estimate assumed such bonuses would not be needed to attract or retain participants in a civilian program.

Now, that last sentence, as far as I'm concerned, is obvious. They evidently think something is wrong with that. Is this an accurate assessment of your methodology?

Dr. MULLER. There are three shortfalls in their comments. No. 1 is the attrition factor. One of the factors of SERTA is that the attrition takes place in the civilian school system at no cost to the military.

When we were talking about the community college of the Great Lakes, there was not time in the testimony to point out there were several other programs, such as jobs, and remedial aspects that are provided in the military school system, but that for an enlisted man in the service is accruing a daily cost of salary and support.

In the community college system, this is all done as a civilian in the school system. What we are saying is we are going to compete for this man on a technical basis with the industrial community to get a man that is qualified.

The attrition factor has been handled prior to the time he comes into the service. There has been a slight concern that he might attrite during the time he is in basic training, but the concept of the military, especially the Army, is that the man will go through his training as an E–3.

This is already provided for in the Stripe for Skills, or at the option of the recruiter or entry office if the man has skills and is more mature. He does not go play mudpies. He goes out and learns what it means about the military code and a few other things that are necessary for soldierization.

The next part that is in there is saying that I have said there are other costs in the school system. There are no other costs. The costs are quoted, and I will give you, for example, just one school.

I can give you for a hundred schools or the community college system can give it to you across the board. We are talking in terms of about $1,500, $1,600, $1,800 in tuition costs. We are talking being about $300 or $400 in books or so forth.

The stipend was only admitted into the bill as an option to take care primarily of the EEO aspects of it, as there will be, and we must recognize, there are depressed areas where the man would not have the funds to be able to come in, so that was put in, but the numbers we anticipate, especially for the skilled numbers we are talking about, and the fact that there are resources available, that the school provides themselves out of their trusts, that is not a significant factor. In fact, I see no need for any stipends.

My observation is that where I find people in civilian schools in this category that I'm talking about, these people have fought the world, and came back to school under their own desire. Most of them are working in their spare time. The more work they do on the outside, the higher their grade level is in correlation with their course content, so the man is much better all around.

Senator JEPSEN. Yes, sir.

Dr. DARROW. I want to add two things, and he very well covered those. I do not have before me any figures, but all those I do remember having access to indicated that attrition went down as the new recruit or the acquisition's educational level was raised.

Senator JEPSEN. That's correct.

Dr. DARROW. This is trying to hinge, without seeing either the paper that you have or his figures, that's a point that I need to stress. No. 2, to add to that, the Air Force has or had stripes for college, which a person could come in up to E–3, so there was a direct, up-front acknowledgement of a year to year and a half of college training with the payback.

The third one goes back a little bit, not to be redundant, but when I was actively involved and responsible for a large part of the Air Force's technical training, I could not get true costs of technical training, could not get it.

Senator JEPSEN. This has all been put in the record. I wanted to explore it while we are here together, because I have sensed at times and I think quite accurately, that when some agency of government, and I don't want to confine myself to the Pentagon and military, has established that it isn't in favor of something they can create an awful lot of smoke, an awful lot of bureaucratic legalese, and a lot of reasons for not doing something.

I think that—I have a feeling in studying this report that some of that has crept in if you can cast some question on the validity of someone's suggested or projected savings or figures or numbers, it just makes it—it just holds back its progress just a little bit longer.

Now, trying to keep it simple and on the basis of the testimony this morning. At Kirkwood Community College, we have this room with the lights on, and the streets were plowed out. The facilities here are being used.

The base of this facilities is spread out over a rather large tax base and is here, educating folks in our country already. For someone to come here to take a medical technology course of some type, and I assume you have them already in existence or have the facilities and equipment there, as opposed to sending an Army reservist, to where, General, San Antonio?

Mr. HULTMAN. Our primary place, my daughter just finished a course there.

Senator JEPSEN. My son went there before he went to Vietnam, so I thought I was right. In San Antonio at the base there, what is the name of the base?

Mr. HULTMAN. Fort Sam.

Senator JEPSEN. Fort Sam Houston. You have, as somebody has indicated this morning, a fire department, their own theater complex, their own stores, swimming pools, recreation, tennis courts, military police, truck pool, hospitals, and that's all paid for a separate unit and separate entity for a person to go and get medical training.

Now, if you want to simply take some bottom line, commonsense measurements of those two examples. We have to ask: Can we provide at Kirkwood Community or some other college in Great Lakes or anywhere else where there are facilities, training for a lesser amount of money than sending a person to a special spot somewhere else in the country that has to support the same services, on a smaller scale, as the entire city operation of Cedar Rapids where Kirkwood Community College is based?

I think the answer would be obvious. Of course there have got to be savings if people could in good faith sit down and work together and bring this about. I think we have explored that.

Mr. NEWTON. Senator Jepsen, the particular scenario that you pointed out there is that this young person is living at or near their home. They are not moved 1,500 miles from home. The morale and the things that go with it is an opportunity to develop more in the confines of their own home and work environment.

Aside for all the cost savings, that is another plus in this category.

Senator JEPSEN. Should there be any reason for these military schools, they will say, well, now, we have got to keep these military schools intact to accomplish these missions because many existing courses in civilian institutions are tailored for civilian employment.

Some prospective military personnel under the proposed legislation who graduate from an approved institution would be required to attend a military school for follow-on military training upon entering the military.

Also, some specialties are not compatible with civilian institution training, we have already talked about that, and must be trained in a military environment.

Since military schools must remain intact to accomplish these missions, what is the economic benefit on decentralizing the current military trained establishment?

I think the key to that question is the last sentence as it's written here. Since military schools must remain intact to accomplish these missions, what is the economic benefit in decentralizing the current military training establishment?

I might state, before anybody responds to that, I haven't seen anywhere in the recommendations that we decentralize the current Military Establishment. I would guess maybe we had the assistance of somebody from the Pentagon who wrote that question, so I'm going to ask it.

Mr. HULTMAN. Senator, let me ask again as an individual and not representing DOD in any capacity to that issue. One, I think we must start out from a major premise that we are just—the concept here is not to replace something, first of all, because we want to go to a higher degree of readiness. That's the first thing that is involved here. It's just a question of doing the same thing that we are doing now by somebody else.

In other words, the community college is doing something that the military is doing at the present time. What we are seeking is to get an increase in readiness, to get more people at a higher degree of readiness—something that isn't being done to that degree today. That is no criticism to the military.

With that in mind, to reach that advanced stage, as a commander right now, as a statement of fact, in many hard-skill areas, it is not economical for the present military system to give certain individuals certain education, and we have a program where we have contract training, where right now it's illustrated by the Great Lakes naval experience, naval station experience, as well as in my own command where either for the reason we don't have the quota, the school is not available, because they are full up and they are doing everything they can do, or, two, it just isn't economical to set up a course or to go someplace like you mentioned to a present post or installation that we privately contract right now with local institutions in order to meet a given skill requirement.

So it seems to me what we are really talking about here is taking a present concept that is acceptable and is being used but promoting it into a far more comprehensive program and tying not just the advancement in the skill part but to overall readiness in terms of availability of manpower, where they fit in the scheme of recruiting in terms of the Active or the Reserve. When you put that total package together, not only for the military but for increasing the civilian skills of readiness, which is so critical and which I think is the real shortfall of our defense posture today, in my judgment, and then add to it the element of the impact on society as a whole out here in creating jobs

and giving individuals a better chance to operate in society constructively and not be at the dole or whatever impact they have to receive from the Federal or State or local government in order to live in the society. When you pull all those factors together, the bottom line is that we are going to increase readiness.

We are not going to compete, because that's part of what has got to be worked out in the program, because we are not going to go out there and replace the hard-skill schools of the military that need to give a certain skill or advanced skill or a finishing off, what you might say, of that particular need. That's not the issue.

I don't think that anywhere that should become the issue because that's not, as I view it, the great merit of this system. The great merit is to provide basic skills that can be done more economically with any present system with a base that is already there in the interest of the taxpayer's dollar, but also in the process to get these other benefits that are indicated.

I don't see it in any way as competition or replacing in large measure, thus I think in the discussion that you had a little earlier with Doctor Muller, I think maybe sometimes individuals are looking at a simplistic approach that by doing something here, we are going to totally do away with something over here or replace something over here, and I think that's not what we are really talking about.

In seeking a higher degree of readiness for the military, to put better hardware into the hands of combat, combat support and combat service support people, and to put that better hardware in the hands of soldiers and all those who represent the various military, who are superior in their confidence, their initiative and their leadership, which is really where the bottom line comes.

When you give more experience and more education to a soldier or Marine or whatever it may be, it increases his confidence, it increases his responsibility and his leadership, and those two things together have been the success story of the American militia from day one, because without the two there is no way that we can compete with the numbers, et cetera, et cetera, of Russia and the Warsaw Pact.

It seems to me we are going to have to posture it in terms of a higher degree of readiness, supplementing over here largely and doing some things in a better, more cost effective way, but not in competition or replacing those military schools that are so critical and so important for the polishing off on the one hand or doing it better in those particular areas than can be done in the civilian sector.

I think you have to always keep those concepts in mind because otherwise we look at some very simplistic answers or solutions to a very complex problem.

Senator JEPSEN. But as a taxpayer and a person who believes in old Yankee ingenuity, let's go back one step further. Why not take a totally integrated plan for training all of our service people in the country in medical already established civilian 2-year institutions? Let's just stick with the medical field, on the surface it looks like it might have promise.

What would be wrong with integrating training for all of our basic medical care with facilities across the country that already exist that have taxes being paid for most of them, or even where they are nontaxed, private institutions, as long as the schools were certified and

accepted. If we could more economically train our soldiers, sailors, Marines, Air Force people, why shouldn't we close down a base that has been established for full-time, all-out war conditions when we have 11, 12 million people in the Reserves and many million more civilians supporting them?

Now, I'm not suggesting we close Fort Sam Houston. I will have a call from John Tower when I leave here, from both Texas Senators, Bentsen and Tower, asking what I am doing in Iowa closing bases in Texas?

We found out in Congress. It's very difficult to close bases. Even when bases are sitting there, collecting dust, when it costs hundreds of thousands of dollars for protection. They don't want them closed.

Maybe I have answered the question. Don't you think we should explore that?

Mr. HULTMAN. I think very definitely. I think the partnership concept that has been expressed here get to that point. I think the road we have taken in the Department of Defense in the last few years where we have goes with a giant leap to using those skills that have been prepared in this sector is the proof of what you are saying right now, Senator, and to the degree that that means that on the active side of the House, installation side, et cetera, that is a step forward and a kind of adjustment that we have got to take and continually have to take by way of upgrading ourselves.

My point was that I think sometimes we bottom line it to a simple, simplistic that you are going to replace something automatically with something else. That was the only point I was trying to make, that it is a complex matter, and you have to analyze it very carefully from the total picture standpoint.

But I think if you do, then there is going to be room for that partnership, and we are going to get a better soldier, a better sailor, a better marine, more qualified, the state of readiness going up, at the same time do it in a way that is going to be far more cost effective.

Senator JEPSEN. We have 5 minutes. We are at the end of our hour. We will take 5 minutes more. I have a couple of questions that I want to make sure we get into the record and some comments. Please, I would like your comments and, if you can, try to make a one liner out of a paragraph.

Dr. DARROW. I think we need to be very careful. Although you gave an excellent example of a program, the Air Force does a great deal of its medical paraprofessional training in the State of Texas. We do have to be careful there.

You use an excellent example, I was searching my mind for a paramedical school that would be unique to the military service, and I was unable to come up with one. That was an excellent field of training.

Senator JEPSEN. You are a former Air Force officer, aren't you?

Dr. DARROW. Yes.

Senator JEPSEN. Dr. Hunter?

Dr. HUTTER. Very quickly, sir; I think the example you used is the best that could be used. There is no reason why there should not be total integration and training with respect to medical technology.

There could possibly be some arguments that community colleges could not provide qualified fire control technicians, but medical tech-

nology and allied health services are common in the services as it is in civilian life. It's an excellent example.

I would also like to echo General Hultman's comment. It seems to me that some of these arguments that are being exchanged about cost studies and cost savings are being expressed in rather stark terms. It is not an either/or. I don't see how military training programs can be totally replaced.

The challenge here is to articulate, to form partnerships, to join in common needs.

Senator JEPSEN. Do you want to look at some real duplication of expensive facilities? Look at a 40-mile radius around Washington. DC, and we can talk about duplication of medical facilities.

In their comments on the legislation, the Department of Defense has stated that the services are opposed—quote:

> Services are opposed to a program that would place technical personnel, no matter how well qualified technically through prior training, in leadership positions without extensive operational experience. Qualified noncommission officer leaders cannot be produced by training alone. They must be developed through experience.

Under the legislation, products of the program would enter the service laterally in a leadership position as an NCO without any practical experience or job experience for that matter.

How can we produce demonstrable military leadership that would be consistent with technical training provided in civilian institutions? Can the Reserves do some of that?

Dr. DARROW. That has some merit, but it also has a large degree of fallacy. If we look at what the services, No. 1, historically have done in times of national emergency about drawing in resources in a very definite leadership capacity, and, currently, the services all have now advanced entry programs, Stripes for College in the Air Force, other names in other services, to bring people in at positions which equate to supervisory positions at this time, the services have historically accepted this for officers without question, an engineer, a physician, a professional.

We bring in—we did a couple years ago. I'm not current. We bring in medical people up through the grade E–5, might even be full colonel now, into the medical profession. One example, I know he was the commander of the hospital at Ramsden Base in Germany, and he was a colonel. We have historically done that in advanced ranks, putting him in a position to be in a leadership position.

We are trying to do it with engineers by a greater extent by offering them advanced leadership status. If the attack is on E–4 or E–5, which we are bringing them up to E–4, the counter would be we have these programs enlisted, and we historically have them at the commission ranks, no major problems that I have evidenced.

Mr. HULTMAN. Senator, I think there is a fundamental fairness in that position if we could have it the way we want it, but as has just been pointed out by Dr. Darrow, we can't necessarily have everything, so what we have done, and I think it's the logical division, and I guess that's what I was trying to get at a little while ago, with their certain functions that still must be carried forward by the active establishment or by the military entity, this is one of them.

We don't teach leadership in the military sense of the word on a tactical battlefield for that medic that we have been discussing here. There still to me is not a dichotomy. You teach him the basic skills that we have been talking about here, being a medical tech or whatever it is that this individual is going to be that has commonality, but then in his actual active duty phase or his military phase of that House, we give him that training that specifically refers to now this leadership that he must have, and I don't have the problem with bringing in an E–4 or an E–5 if we will bring him on after that technical training and give him the opportunity for leadership training.

That, very frankly, is a present problem with our present structure right now. We are trying to do our very best. I think it can be handled by making sure that when you work out the system, that that individual who has received this basic fundamental common training of a technician or whatever it is we want to talk about, a truck driver or whatever it may be, then gets an early opportunity on to get the skills of leadership.

And I think when you do that, and don't delay it, that we will then get the two facets that we need and overcome to the degree possible the objection that you have referred to here, which I think is a valid objection to the extent that we have got to meet that test, and certainly that is a responsibility that I am sure the Active Forces and the Reserve Forces today are willing to meet, but it's a vital one, no question about it.

Senator JEPSEN. Gentlemen, I thank you for your testimony today. If there is any one of you that would like to make a further closing comment or statement, you are welcome to do so. I would appreciate it if you would be as brief as possible. We will be winding this up.

Dr. MULLER. I would like to make the comment strictly that in the approach that the military has been taking and the research that I did, many of the things that you point out were brought up by the military at their request specifically at Redstone Arsenal stating that they needed this transferability of the education provided by the community college, and they would build upon that at extreme cost savings.

The other point I would like to make is that this is a version of an upfront GI bill. This provides an opportunity to the men and women of this United States to get an education and use that education to gain the experience coming into the service in a productive 4-year or whatever number enlistment is required, and, in turn, return to the civilian economy.

It is not a demobilization of 10 million people nor the education to put us on the Moon or where we are or have been in the technology race, but it contributes to that. It is very significant and it costs the Government nothing.

I would like to point that out, it costs the Government nothing; it is a savings of anywhere from $40,000 to $50,000 per man.

Dr. DARROW. I think that there is a question, which I think you alluded to, and we all were aware of it, but the cost savings alone, if the several services are wanting to acquire new and more modern equipment, and I think we are talking about a permanent satellite in space station, the money may be right here in training costs.

No. 2, using civilian institutions to train people at all levels in the military is replete in history, documented, the surge of aviation training pilots, et cetera, World War II, World War I was accomplished, so I think our case rests with the economy and the history of the institutions being able to provide this training.

Mr. HULTMAN. I don't have anything further to add, Senator, except to say that I wish to thank you and your subcommittee for the opportunity on behalf of all these men who have participated here and all those who have been represented here to give us this opportunity to discuss with you at this particular stage in legislation our thoughts and our ideas, because I think that's very critical, that with that kind of input, your subcommittee and the Senate will make an ultimate decision which is in the interest of the Department of Defense, the civilian sector, the defense posture of our Nation as far as upgrading our status as far as industry, our educational system and, of course, that it be done in the most economical way to protect the taxpayers of our country. I thank you.

Senator JEPSEN. That statement provides a good note on which to close this session. It is very well stated. Thank you. This session is adjourned.

[Whereupon, the subcommittee adjourned, subject to call of the Chair.]

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